

NAVAL AVIATION news

COAST GUARD AVIATION



MAY-JUNE 1983

Sixty-Fifth Year of Publication

(ISSN 0028-1417)

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COVER—This is the red and blue Coast Guard slash. Designed in the 1960s, the insignia denotes the Coast Guard's mission, which sets it apart from all other branches of the service. Artwork and layout by Charles C. Cooney.

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Naval Aviation News is published bimonthly by the Chief of Naval Operations and Naval Air Systems Command in accordance with Navy Publication and Printing Regulations P-35 (revised May 1979). Opinions expressed are not necessarily those of the Department of the Navy. Reference to regulations, orders and directives is for information only and does not by publication herein constitute authority for action. All material not copyrighted may be reprinted. Naval Aviation News offices are located in Building 159E, Room 590, Washington Navy Yard Annex, Washington, D.C. 20374. Phone (202) 433-4407/8/9, autovon 288-4407/8/9. Annual subscription is available through Superintendent of Documents, Government Printing Office, Washington, D.C. 20402. Phone (202) 783-3238. Second-class postage paid at Washington, D.C., and additional mailing offices. POSTMASTER: Send address changes to GPO Order Desk, Superintendent of Documents, Washington, D.C. 20402.



Coast Guard and Naval Aviation share a common heritage. "A New Dimension in Coast Guard Aviation" (p. 6) highlights the progress made over the years. "The Early Years" (p. 8) tells how it began.

"The Marriage of Fixed-Wing Aviation and the Cutter" (p. 12) seems like an unlikely union, but the Coast Guard did it quite successfully. The icebreaker flyers (p. 16) did it one better with helicopters, and are still in the business today.



"Lifesaving the Hard Way" (p. 20) is hard to believe. It's an incredible story about one not-so-typical USCG rescue. "Doctors on the Wing" (p. 22) tells how flight surgeons do their part in the USCG lifesaving mission.

A new sleek jet takes to the air while an old bird is retired. "Guardian on Station" (p. 24) profiles the USCG's latest patrol aircraft, the HU-25A. "Albatross" (p. 30) is a eulogy for the great HU-16 which the *Guardian* is replacing.



For those who thought that maritime patrol (VP) was only flown by Naval Aviators, stand by to be corrected. "VP Coast Guard Style" (p. 32) is an exclusive by Jess Barrow about VP-6 — a WW II USCG-manned Navy patrol squadron.

"Cdr. Elmer Stone...Coast Guard Aviator No. 1" (p. 36) is a naval aviation pioneer no matter how you cut it. He was Naval Aviator No. 38 who made things happen in the USCG with courage, dedication and ingenuity.



Coast Guard Aviation

Naval Aviation brings to mind vivid scenes of aircraft carrier operations with air strikes being launched amid hostile combat conditions. While this is perhaps the traditional and most familiar form of Naval Aviation, it nevertheless is only one element of the broad concept of using aircraft at sea to protect United States national interests both offshore and abroad. Regardless of the scale of operations, whenever ships operate at sea with aircraft, naval aviation is being employed.

This issue of *NA News* is designed to give special recognition to United States Coast Guard Aviation. While it may not conjure up the awesomeness associated with blue-water super carriers and massive battle groups, Coast Guard Aviation can be every bit as fascinating and colorful. It is also a fact that a great deal of Naval Aviation's history, development, and growth is closely shared by the two sea services. These include the development of maritime patrol, catapults, aviation training devices, and SAR techniques, to name a few.

The theme of this issue of *NA News* coincides with a grand occasion at the Naval Aviation Museum, Pensacola, Fla., on the eleventh of May — the official opening of the Coast Guard Aviation exhibit in the main hall of the museum. The ceremony will be highlighted by the enshrinement of the second group of aviation pioneers into the Naval Aviation Hall of Honor. Along with five other distinguished and well-known early Naval Aviation leaders, the list will include for the first time a Coast Guard officer, Commander Elmer F. Stone, who is best known for his role as one of the pilots in the Navy's NC-4 flying boat which made the first flight across the Atlantic Ocean in 1919. Sharing the honors of being inducted into the Hall of Honor are General Roy M. Geiger, USMC; Glenn Martin; Admiral Marc Mitscher, USN; Admiral Arthur W. Radford, USN; and Vice Admiral Charles E. Rosendahl, USN.

The stories in this issue were carefully chosen to give a balanced presentation of Coast Guard Aviation from its early history to current events. They deal with Cdr. Stone's vision regarding the future of Coast Guard Aviation, as well as the courage and resourcefulness exercised by Coast Guard Aviators and personnel, in the face of the most difficult flying conditions, to complete the mission at hand. They also cover the newest aircraft and high-technology surveillance systems that will take the Coast Guard into the next century. One unique story is about VP-6, a patrol squadron manned entirely by Coast Guard personnel which flew the *Greenland Patrol* in the North Atlantic during WW II. Another story tells of a daring helicopter rescue, the type for which the Coast Guard is justly famous.

The aviation heritage shared by the Navy and Coast Guard is one of cooperation and mutual respect. It can be traced from the earliest days to the current efforts of the two services to deal with drug smuggling off the coasts of Florida. This commemorative issue is a cooperative undertaking by the *NA News* editorial staff and the U.S. Coast Guard Headquarters Public Affairs Office, Washington, D.C. *NA News* greatly appreciates the outstanding support for this project provided by Captain John R. Sproat, USCG, Chief of the Public Affairs Division, and his staff. We especially wish to recognize the efforts of Commander Bud Breault, USCG, Assistant Chief of the Public Affairs Division, and Mr. Werner Siems, Chief of Editorial Services, in making this issue a success. ■

New Tomcat Engine

The Navy accepted the first production TF30-P-414A engine for the F-14A *Tomcat* from Pratt & Whitney Aircraft last December. The A model provides significant durability, reliability and operability improvements over the TF30-P-414 engine. Pratt & Whitney will provide 158 of the new engines to the Navy. After four years and 3,300 hours of engine testing at the aircraft company, the Naval Air Propulsion Center, Trenton, N.J., and the Naval Air Test Center, Patuxent River, Md., conversion kits were delivered to the Naval Air Rework Facility, Norfolk, Va. Existing TF30-P-414 engines were converted to the improved P-414A configuration, and delivery to the fleet began in early 1983.

VX-1 Flies EMPASS



VX-1's EP-3A outfitted with EMPASS gear.

The electromagnetic performance of aircraft and ship systems (EMPASS) program is a service provided to U.S. Navy ships, helicopters, activities or test ranges by VX-1 based at NAS Patuxent River, Md. The system is designed to monitor and test the accuracy of radio frequency emissions.

The evaluation of all electromagnetic (EM) systems is a two-fold process consisting of data acquisition, and data reduction and analysis. For data acquisition, EMPASS utilizes a specially configured P-3A airframe, designated EP-3A, which is extensively modified with a precision instrumentation suite. VX-1's unique EP-3A incorporates special purpose antennas, receivers, analyzers, recorders and navigation equipment which, under computer control, are capable of collecting very accurate parametric data on EM systems. The EMPASS data reduction and analysis center analyzes and interprets the information gathered and provides a written report to the EMPASS customer.

The program can supply information required for engineering changes to new or existing systems, tactical doctrine for effective operations of existing systems, vulnerability assessments by considering emission control effectiveness, and performance data for existing or future EM system designs. Lt. W. H. Mueller

F/A-18 Becomes Operational

The first McDonnell Douglas F/A-18 *Hornets* officially entered operational military service on January 7, 1983, in ceremonies at MCAS El Toro, Calif.

Marine Fighter/Attack Squadron 314 has transitioned from the F-4 *Phantom II* to the multimission F/A-18 strike/fighter, which will eventually replace all Marine Corps *Phantoms*. The Navy will activate its first operational F/A-18 squadron in October of this year. Eighty-four *Hornets* have been approved for the FY 1983 budget for the Navy and Marine Corps. In addition, Canada has ordered 138 *Hornets*, Australia 75, and Spain 84.

The F/A-18 has demonstrated reliability and maintainability several times better than the F-4 and A-7, the aircraft it replaces. The *Hornet's* reliability was

measured at nearly three flight hours between failures, compared with less than one flight hour between failures for the F-4 and A-7; its maintainability was measured at 25 to 50 percent fewer direct maintenance hours per flight hour.



McDonnell Douglas Corporation

This swarm of Hornets from air test and evaluation squadrons at China Lake and Point Mugu, Calif., cruises the Nevada skies in tight formation.

AV-8B Completes Bombing Mission

The AV-8B *Harrier II* recently demonstrated the ability to fly 422 nautical miles, release seven 570-pound bombs and return to base without refueling. The two-hour, 13-minute sortie was flown from the Naval Air Test Center, Patuxent River, Md., by McDonnell Douglas AV-8B project test pilot Charlie Plummer, and chased by Major R. Cabana, USMC. The flight began with a 700-foot short takeoff to a high-low-high mission profile which included entering a simulated target area, releasing the bombs and returning to base.

The AV-8B that Plummer flew is a full-scale development (FSD) aircraft that is used to flight test many aspects of the *Harrier II*'s performance. It carried approximately 800 pounds of flight test instrumentation that will not be in the production aircraft.

Starting in the fall of 1983, the Marine Corps plans to take delivery of the first of 336 Av-8Bs.



McDonnell Douglas Corporation

This *Harrier II* carried the heaviest load yet recorded by an AV-8B when it took off with a gross weight of 29,664 pounds.



Last Ditch Maneuvers

An intercept between an A-7E Corsair acting as the adversary and an F-14 Tomcat resulted in a close pass with both aircraft having a "tally-ho." At one point, the F-14 pilot leveled his wings and pulled his aircraft smartly to a 30-degree, nose-up position, to force the A-7E into a vertical overshoot. It experienced moderate buffet as the airspeed dropped rapidly to below 200 knots. The aircraft departed from controlled flight and snap-rolled to the right with the nose falling through to an extremely nose-low position. The pilot neutralized the controls, added slight right rudder and was able to effect an upright recovery. The RIO thought the maneuver was a planned sliced turn since the pilot did not lose sight of the bogey and had said nothing about losing control of the aircraft.

On the next intercept, the F-14 pilot sighted the A-7 bogey at 11 o'clock high and commenced a starboard nose-high turn. After 45 degrees of nose-high turn, the F-14 again snap-rolled to the right, with some right yaw, and pitched almost straight nose-down.

The F-14 pilot realized he had again lost control of his aircraft. Informing the RIO of his actions, he neutralized

the controls. The RIO advised that the port spoilers were partially extended. As the nose of the aircraft came back to the horizon, the pilot realized that the aircraft was not recovering and began to apply forward stick. The aircraft continued to yaw and roll right while the nose dropped below the horizon again. The pilot now applied full forward stick, neutral lateral and left rudder. The angle of attack indicator was pegged at 30 units and the ball was full left. The aircraft pitched up and stabilized with the nose on the horizon.

The A-7 pilot transmitted that the F-14 was in a flat spin. With the rotation, the RIO was experiencing moderate eyeballs-out Gs. The pilot was pressed against the glare shield, could no longer see and was losing consciousness. The RIO pushed himself back into his seat and executed command ejection at 9,000 feet. The pilot was totally out of the safe ejection position.

The A-7 adversary pilot saw two good chutes and broadcast a mayday to the ship with bearing and distance. An S-3 vectoring to the crash heard the F-14 pilot transmit, "Two good chutes" on his PRC-90 as he descended in his chute. The two crewmen landed near each other, released their KOCH fittings, entered their rafts, pulled their seat pans into the rafts and deactivated their homing beacons.

The A-7 pilot, anchored overhead at 500 feet, detected errors in bearing and range vectors passed to the rescue helo, and directed the S-3 crew, now at the scene, to detach, visually pick up and escort the rescue helo to the scene.

By this time the F-14 pilot had paddled his raft alongside the RIO's. The S-3 pilot, inbound with the rescue helo, transmitted a request for a smoke flare. The RIO copied the request on his PRC-90 and lit the day end of a flare. A chunk of the burning material broke off and fell into the lap of the pilot in the adjacent raft. As the rescue helo approached, the pilot informed the RIO that his feet were injured during ejection. Both crewmen egressed their rafts which the RIO deflated with his survival knife.

The helo made one pass over the survivors and then returned, deployed a swimmer into the water and set up a

10-foot hover. The swimmer approached the RIO first because his parachute was still below his raft and possibly still connected. The RIO verified that he was clear of the chute and directed that the pilot be rescued first. The RIO and swimmer were then hoisted aboard with 38 minutes having elapsed between ejection and rescue.



Grampaw Pettibone says:

"Great balls of fire! A departure from controlled flight can ruin your whole day, particularly when it results in a spin and a ride in a rubber raft with lap full of flaming embers. While



the exact cause of this mishap is undetermined, several lessons were learned which are worth sharing, hindsight being what it is.

1. The breakdown in crew coordination following the first loss of control was a problem. The RIO didn't recognize the departure and therefore failed to discuss the maneuver or point out the rapidly decaying airspeed.

2. Delay and improper flight controls input increased the severity of the departure and enhanced the probability of the flat spin. The F-14 NATOPS manual states the most important action of a departure recovery in reducing the angle of attack.

3. The helo pilot could have arrived five minutes earlier had the crew left their homing beacons on. Even though the A-7 was overhead, leaving the beacon on until the actual rescue vehicle arrives is worth considering.

4. Egressing and deflating one's raft before the swimmer arrives is worthy of discussion. Occasionally, the helo is not able to hoist either one or both survivors aboard, and often the water is cold.

On a closing note, Old Gramps has frequently heard a departure from controlled flight referred to as a last ditch maneuver. As pointed out here, this too often means that it was the last maneuver before you ditched.

Snake Charmer

An F-4 pilot was on a refueling stop one leg away from home base. Frustrated when the *Phantom* wouldn't accept external electrical power for starting, he decided to try a non-standard procedure, principally used for testing the ram air turbine (RAT) in order to get going. In the procedure, high-pressure air is directed at the RAT which spins into operation, providing power. He deployed the RAT and, standing on the wing, held the nozzle of the hose from the Wells Air Starting Unit. The pilot intended to guide high-pressure air from the hose across the blades of the RAT. The RAT would spin and thus produce electrical power for lighting off his fighter.

Fast-moving air charged through the hose to the nozzle. Unfortunately, back pressure on the hose caused it to flail and whip about wildly, in effect tossing the flyer to the concrete be-

low. The medical folks needed approximately 100 stitches to close up a three-inch gash in the *Phantom* flyer's left forearm.



Grampaw Pettibone says:

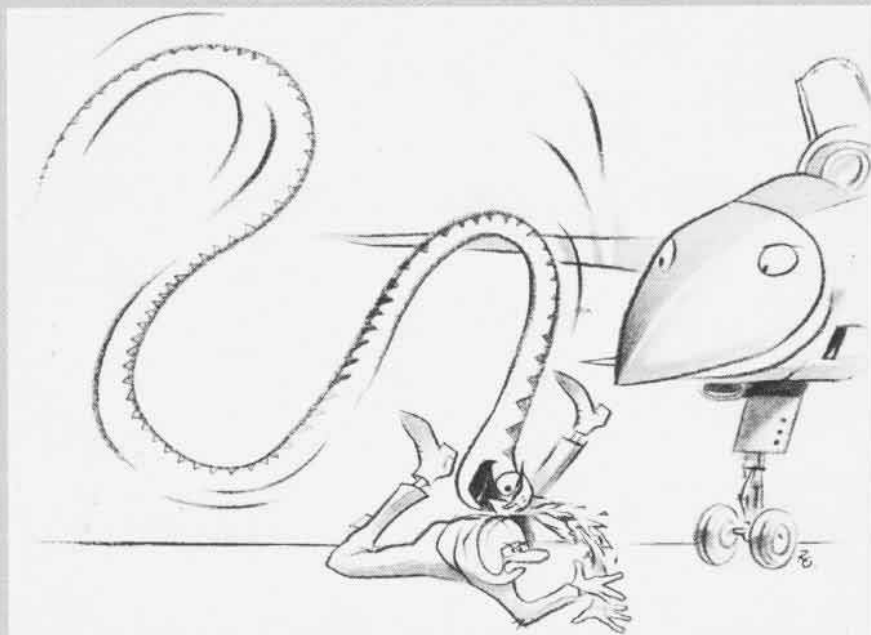
Slithering serpents! An old wingman told me about a wrestling match he saw one murky night in a forbidden hideaway in Casablanca, or maybe it was Istanbul. A berobed and turban-topped fellow got himself wrapped up with an 18-foot python. The match was a draw. It was all an act, of course. The python and the man were really buddies.

This aviator surely didn't have a buddy in that air pressure hose. It's a snake that won't dance with anybody.

There is a procedure for testing the RAT, but with the nozzle attached to the aircraft using an appropriate device. And this procedure is not designed to provide electrical power for ground starts.

What prickles my hide is the fact that trained technicians were available to repair the bird. The pilot-in-a-hurry convinced his RIO and visiting aircraft line personnel that he could fix the machine on his own. Adding salt to the wounds was the discovery that this was not an isolated case, that it has happened before in other units, but without injury.

Leave repair actions to trained technicians. Mixin' it up with high-pressure snakes can leave cracks in the cranium, not only slits in the skin.



A New Dimension of

In the spring of 1975 on a beautiful 30-acre site of Naval Air Station, Pensacola, Fla., a gathering of dignitaries witnessed the dedication of the U.S. Naval Aviation Museum. Built entirely with funds donated by those who love Naval Air, there was for the first time a national center for telling and displaying the saga of Naval Aviation. The Naval Aviation Museum has an enduring role to play in affirming the unique position which gallant airmen of the naval services occupy in America's history.

Shortly after the dedication, the Navy invited the Coast Guard to join in the museum project because the two services have enjoyed a long association and common purpose in war and peace. The Coast Guard promptly accepted, since it shares a similar sea-going heritage and tradition, and also has its own exciting aviation story to tell — a story of gallantry, quiet courage and sacrifice in its multimission service on and over the oceans. The Naval Aviation Museum Foundation, Inc., also invited the Coast Guard to designate a Coast Guard Aviation trustee whose duties would include fund-raising. An advisory group was appointed to publicize museum objectives, attract artifacts and memorabilia for the forthcoming Coast Guard exhibit, advise on museum matters and help in fund-raising ideas.

The Coast Guard has a long and distinguished record of service to our country, and a significant portion of its modern history has involved the airplane. Coast Guard Aviation began in 1916 when Lieutenant Elmer F. Stone, USCG, entered naval flight training. He later served as one of the pilots of the Navy's historic NC-4 flying boat that made the first Atlantic crossing by air in 1919. Other Coast Guard Aviators manned four Curtiss R-6 float planes attached to the cruiser USS *Huntington* during WW I. The first Coast Guard air station was established in 1920 at Morehead City, N.C., with eight surplus flying boats and borrowed Navy equipment, although it was abandoned the following year due to lack of support funds. Another air station was started in 1925 at Gloucester, Mass., with a Vought UO-1 also borrowed from the Navy. From this shaky beginning, the aviation branch of the Coast Guard has become an integral part of the service and today participates in virtually all mission areas.

Among the Coast Guard's notable contributions to aviation history are: direction of the Air Sea Rescue Agency during WW II, which evolved into the present search and rescue organization; pioneering the use of the helicopter as a rescue vehicle; development of the helicopter hoist and the rescue basket; development of helicopter-operating procedures from a moving platform; development of the first helicopter Link trainer; development of a movable training platform for landing and takeoff; formulation of rational open-sea landing tech-

niques and procedures which were adopted internationally; development of scientific over-water search procedures; spearheading the airline over-water safety program; establishment of a SAR communications network; development of aviation ordnance and personal survival equipment; and night-lighting arrays for helicopters.

Although the search and rescue mission is frequently thought to be the Coast Guard Aviation mission, there are others: antisubmarine warfare, harbor and port security, searching for illegal stills, aerial surveying and mapping, and aerial assistance in establishing and supporting the worldwide LORAN navigational system. Today, air stations are tasked with conducting over-water pollution surveillance; fishery conservation patrols; and missions to detect and interdict the flow of illegal aliens and drugs into the U.S.

The Naval Aviation Museum provides a proper setting for displaying artifacts associated with this element of aviation history. The Coast Guard advisory group has been working to identify historical material and memorabilia, equipment and aircraft that would be suitable for the Coast Guard exhibit. They have turned over to the museum a wide variety of items such as old photographs, prints, pamphlets, uniform accessories, a written history of the aerial mapping project of the Coast and Geodetic Survey conducted by Coast Guard aircraft and crews, a color film of the SEEHAWK forward-looking infra-

An architect's model of the Coast Guard display at the Naval Aviation Museum. Visitors to the new exhibit can trace the history of Coast Guard Aviation starting with Coast Guard support at Kitty Hawk in 1903 and leading up to present-day missions and aircraft.

By Rear Admiral William A. Jenkins, USCG(Ret.)

Coast Guard Aviation



red night illumination system used in helicopter night search and rescue operations, and even a cross section of an HNS-1 helicopter rotor blade. In addition, the group has received commitments from private industry for propellers and flight instruments.

Recent acquisitions include an HO3S-1G helicopter, which will soon be on display. The J4F *Widgeon* credited with sinking a German U-boat in the Gulf of Mexico during WW II has also been located. It is now owned by a private party in Nevada and has been kept in operating condition. There is hope that this aircraft will join the HU-16E (CG-NR 7236) *Albatross* now at the museum.

A brief preview of the Coast Guard exhibit finds the story divided into a chronological sequence of historical periods starting with Coast Guard assistance at Kitty Hawk in 1903; 1915-16, the beginning of aviation activities; 1919, Lt. Stone as one of the pilots of the NC-4; 1925, anti-smuggling patrol activities; mid-1930s, beginning of SAR missions; 1934-1941, development of USCG uniquely designed aircraft; and the beginning of WW II.

The Coast Guard's merger with the Navy and its operations during the WW II years unfold with the use of panels describing involvement with ASW as a primary mission; development of the helicopter for SAR and port security duties; organizational development of SAR and related communications networks; LORAN and navigation aids flight check programs; open-sea landing and takeoff procedures and techniques; the PBY-5As of VP-6 in Greenland; International Ice Patrol; and the Coast and Geodetic Survey aerial mapping programs.

The 1950s saw development and improvement in several aspects of aviation, such as acquisition of both fixed wing and rotary aircraft tailor-made for Coast Guard missions; continued development and improvement of navigational capabilities in positioning, marking and tracking icebergs by International Ice Patrol aircraft; development of a cutter/helo team capable of operating underway; and development of emergency ditching procedures based on Captain D. B. MacDiarmid's open-sea landing tests and evaluations.

The 1960s brought about improvements in aircraft capabilities with the later models of the C-130 *Hercules* workhorse, introduction of the HH-3F *Sea King* and the G-2 jet transport.

The final panels on display at the museum update the missions and aircraft of the 1970s and 1980s. They include a roster of distinguished Coast Guard Aviation personnel and an art exhibit depicting current aviation activities.

The first major milestone is the opening of the Coast Guard exhibit on May 11, 1983, and Commander Elmer F. Stone's induction into the Naval Aviation Hall of Honor.

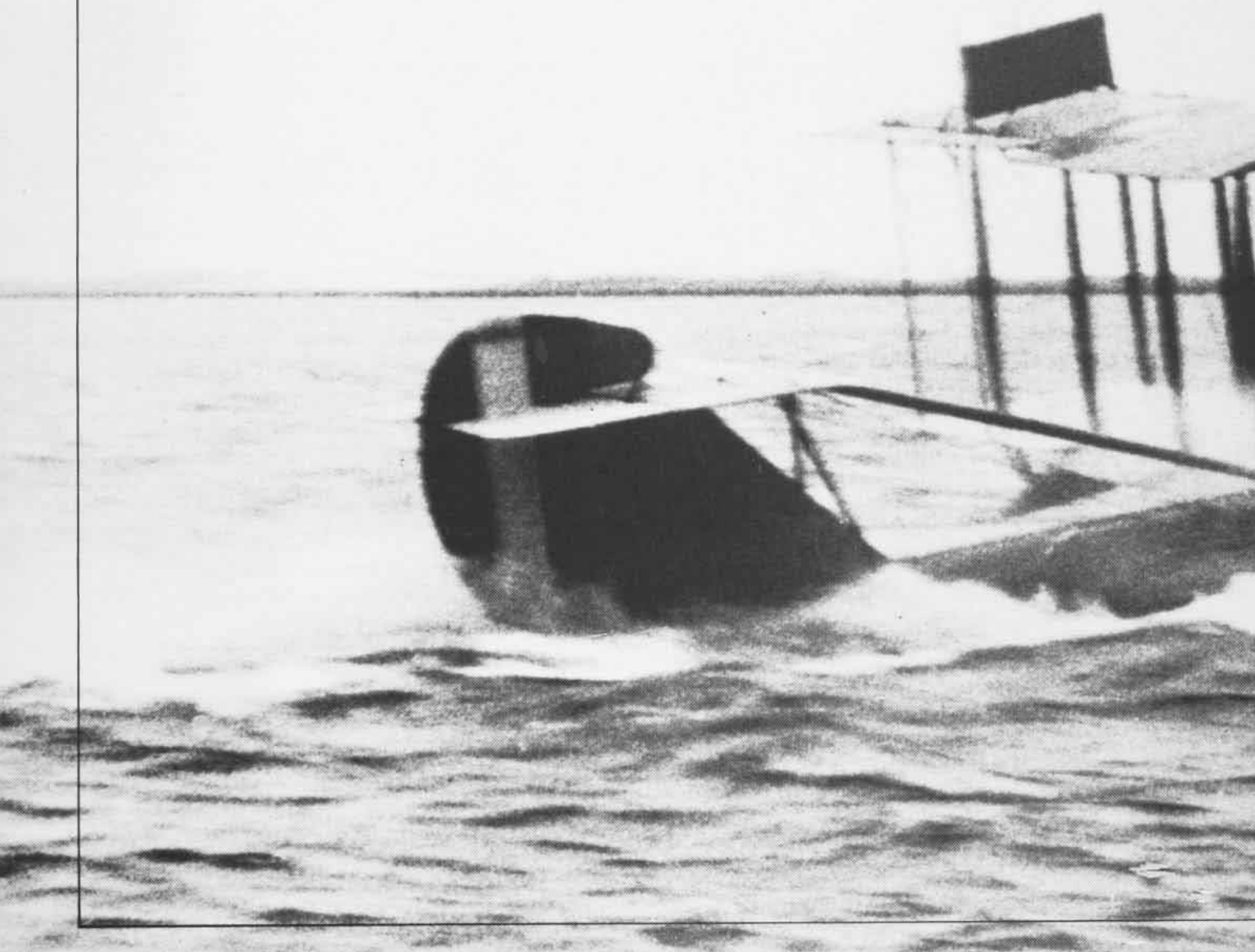
However, the job is not finished. Many exciting additions are in store for this fascinating and important part of the saga of Coast Guard Aviation in the Naval Aviation Museum. The exhibits express the goals and missions of the Coast Guard and how aviation supports them.

To visit the museum is to savor eight decades of Coast Guard history as seen from the vantage point of a special breed of Naval Aviator. ■

The Early Years

Coast Guard Aviation

By Dr. Robert L. Scheina, Coast Guard Historian



The idea of using airplanes to aid in search missions was firmly implanted in the minds of Coast Guard Aviation pioneers long before a separate aviation unit became a reality. As early as 1915, three imaginative Coast Guard officers at Hampton Roads, Va., conceived a plan for air patrols to search for disabled schooners along the Atlantic seaboard.

Captain R. M. Chiswell, then in command of the Coast Guard cutter *Onondaga*, enlisted the support of two of his junior officers, Lieutenants Norman B. Hall and Elmer Fowler Stone. They presented the idea to a representative of the Curtiss Aeroplane and Motor Corporation who lent a plane to them for the experiment. The results were so successful that the two younger men obtained permission to pursue their interest in flying.

Lt. Stone was sent to the Naval Training School at Pensacola along with other Coast Guard personnel. There he earned his Navy Wings of Gold and later became Coast Guard Aviator No. 1 (See "Coast Guard Aviator No. 1," page 36). Lt. Hall was assigned to the Curtiss plant at Hammondsport, N.Y., where he learned how to build aircraft.

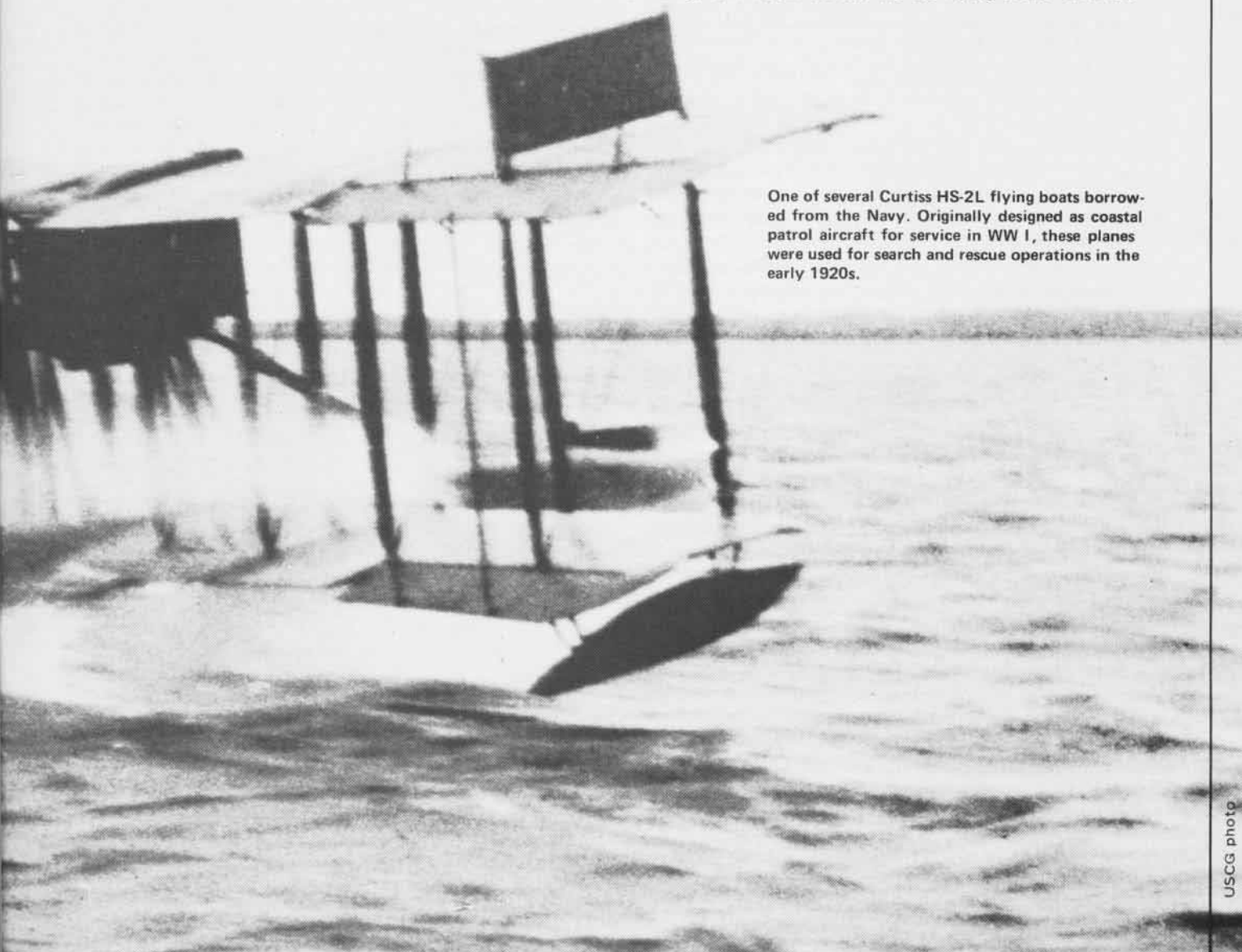
America's entry into WW I brought the Coast Guard under the Navy Department and temporarily halted further pioneering in Coast Guard Aviation.

Several members of that first Coast Guard class of 1916 at Pensacola distinguished themselves during the war. Lt. Stone became a pilot on the cruiser *Huntington*, while Lt. Hall, although not a member of the class, was advanced to the Office of Inspector of Naval Aircraft at the Curtiss Plant. Others of the group were detached to various air stations in France or the United States.

When the war ended, Stone participated in a momentous event as one of the pilots of the Navy's NC-4 flying boat which made the first transatlantic crossing by air.

The Navy Deficiency Act of August 29, 1916, had authorized the establishment of 10 Coast Guard Air Stations, but no funds were appropriated. In 1919, when the Coast Guard reverted to its regular status under the Treasury Department, a modest attempt to revive Coast Guard Aviation was made at Morehead City, N.C.

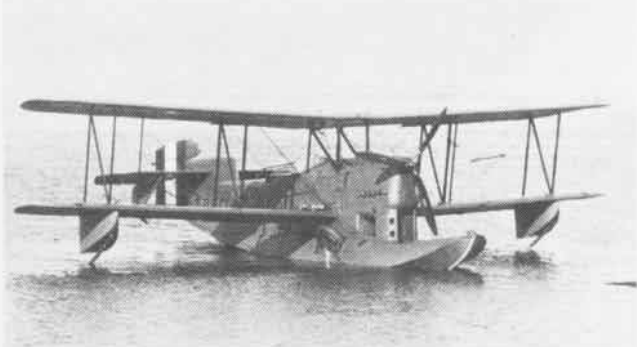
The air station was opened on March 24, 1920, when the Coast Guard assumed custody of the naval air station buildings there. Six Curtiss HS-2L flying boats were bor-



One of several Curtiss HS-2L flying boats borrowed from the Navy. Originally designed as coastal patrol aircraft for service in WW I, these planes were used for search and rescue operations in the early 1920s.

The Early Years

rowed from the Navy's Bureau of Aeronautics and retained until the station was decommissioned. As surplus wartime aircraft, they were eventually deemed unsuitable for further duty and were destroyed. Although no funds had ever been appropriated for its maintenance, the station operated for 15 months until it was placed in an inactive status on July 1, 1921, due to lack of financial support.



The first aircraft built for the Coast Guard was this Loening OL-5 amphibian. Three of these planes were acquired in 1926. One was assigned to Coast Guard Station, Cape May, N.J., and the other two to Coast Guard Station, Gloucester, Mass.

Since this was the first real attempt to use air patrols in performing Coast Guard duties, the Commandant, Rear Admiral W. R. Reynolds, established the responsibilities of the aviation program. Seven distinct missions were established in addition to the regular Coast Guard duties for all units, including experimental flights for locating schools of fish; reconnaissance of land and water areas in surveying, mapping or determining routes for lines of communications; assistance in flood control and relief work for the western rivers' region; emergency transportation services for government officials to remote or inaccessible locations; enforcement of federal maritime laws; patrol duty to locate illicit stills in the swamp areas of the South; and general humanitarian work along the coasts.

The annual report for 1920 listed the valuable services that the planes from the Morehead City station had performed during the year. They assisted many vessels and crashed planes, and aided fishermen in various ways. On two different occasions, planes carried physicians over 60 miles to isolated spots to aid persons in need of emergency treatment. A beginning had been made and, regardless of limited operations of the Morehead City station, it had proved that aircraft had a definite place in future Coast Guard expansion.

The formal history of Coast Guard Aviation began with the first air unit established at Gloucester, Mass., in 1925 after Congress, on April 2, 1924, provided \$13 million to establish 10 air stations. In May 1925, Lieutenant Commander Carl C. von Paulsen, the commander of Coast Guard Base Seven at Gloucester, secured the loan of a Vought seaplane from the Navy. Lieutenant Leonard M. Melka, who had attended the first Coast Guard Aviation

class in 1916 at Pensacola, served as pilot and mechanic for the plane.

During the late 1920s, the problem of law enforcement along the eastern seaboard had become critical. The smuggling of liquor was rife. In checking this illicit traffic, the services of the Gloucester-based seaplane were indispensable. Melka and von Paulsen alternated in making one to three flights daily, as well as three or more weekly sorties, during 1925 and 1926.

Instructional flights were offered and many hours were spent in the air for experimenting, especially in the development of radio. Typical was a series of tests in the use of radio communication between aircraft in flight and ship and ground stations. Coast Guard Radio Electrician A. G. Descoteaux constructed the radio equipment, which was installed in the Gloucester seaplane during 1925. It consisted of batteries, head telephones, telegraph key, microphone and accessories, with a two-way continuous wave telegraph and high-quality voice communication, weighing slightly over 90 pounds. Designed for battery operation and entirely independent of the plane's regular electrical system, it soon became the basis of later standard Coast Guard aircraft equipment.

Naval and commercial wireless equipment then available was impractical for Coast Guard duties. Long-distance communication necessitated the use of highly sensitive receiving equipment which could assure ready reporting while on water or in the event of a forced landing. This involved the shielding and bonding of all equipment and associated circuits throughout the aircraft, and eventually the metallization of all non-metallic members. The work of Descoteaux and C. T. Bolt of the communications section at Coast Guard Headquarters also resulted in the use of the first loop-type, radio direction finder.

The first successful radio broadcast from the air took place on June 13, 1929, at Old Orchard Beach, Maine. Flying in a Loening amphibian covering the scene of operations, Descoteaux broadcast the takeoff and departure of the French plane *Yellow Bird* on the first transatlantic



This Douglas RD Dolphin was the second of 13 of these amphibious aircraft built for the Coast Guard in the early 1930s and used in search and rescue operations.



Left, this twin-engine pusher PJ-type flying boat made its debut with the Coast Guard in 1932. Designed by the Fokker Aircraft Corp. of America (later General Aviation Corp.), it was originally designated FLB for "Flying Boat." Five were purchased by the Coast Guard and the one shown here was later converted to tractor configuration.

Below, the Grumman J4F Widgeon was used by the Coast Guard in utility and patrol operations during WW II. One of these aircraft, flown by Ens. Henry C. White, sank the German submarine U-166 off the mouth of the Mississippi River in August 1942.

USCG photos



flight from the United States in two years. The account was relayed by ground equipment to an extensive national hookup and was clearly received by U.S. radio and several foreign stations.

In 1926, the Coast Guard procured five biplanes of its own under a \$152,000 appropriation for Coast Guard law enforcement. Lt.Cdr. Stone and S. S. Yeandle supervised their construction. Three were of the Loening OL-5 amphibian type and two of the Vought UO-4 seaplane type. Two of the three amphibians and one of the seaplanes were assigned to the Gloucester Station and the other two aircraft were stationed at the Cape May Coast Guard Air Base, which had been established in 1926. Both stations were active in rescue operations and antismuggling patrols during the period 1926 to 1928. No less than 5,113 vessels were either identified or aided at sea.

In 1930, the Coast Guard purchased five monoplane-type flying boats from the General Aviation Manufacturing Corp. and the following year a Viking flying boat. Between 1933 and 1936, it went from 13 to 55 aircraft, and 14 to 27 aviators. By July 1940, the Coast Guard had over 55 aircraft operating from nine air stations. During fiscal year 1940, its aviators made 4,801 flights while logging 13,000 hours, and cruised more than 1,250,000 miles over 9,000,000 square miles.

Other Coast Guard air stations were being established under the provisions of the 1916 Act. At Cape May, the Coast Guard used the existing facilities of the former naval air station, and subsequently made it a base for patrol boats. Increased smuggling of aliens and liquor along the Florida coast in 1928 led to the assignment of two planes to Fort Lauderdale, Fla., as an adjunct to the Coast Guard section base there. An air station was established at Dinner Key, Fla., in 1933 and the hangar erected there later became part of the Miami Air Station.

On March 9, 1934, 15 miscellaneous planes of the U.S. Customs Service were turned over to the Coast Guard. At the same time, three new air patrol detachments were established at Buffalo, N.Y.; San Antonio, Texas; and San Diego, Calif. Six land planes were transferred from the Navy to these bases to aid in combating smuggling activities

across the Canadian and Mexican borders. An aviation training school for enlisted personnel also began that year at Cape May.

In 1935, in Massachusetts, the Salem Air Station was opened and Gloucester deactivated. The same year, special air patrol detachments were established at Charleston, S.C., and, from time to time, at other strategic points along the coast. The Charleston detachment became a permanent air station in 1937 and remained active until 1943, while Cape May continued operating until 1938.

With the establishment of the ninth air station on November 15, 1940, at Mills Field in south San Francisco, Calif., aviation became an integral part of the Coast Guard. The air stations were strategically located in coastal areas not only because opportunities for rescue were greatest there but also to fit them into the national defense pattern.

The first step toward a chain of station hookups for checking and assisting coastal aircraft was taken in 1929. On May 15 of that year, a Coast Guard coastal checking system was inaugurated along the Atlantic seaboard to keep track, by means of regular radio reports, of all aircraft using the coastal routes.

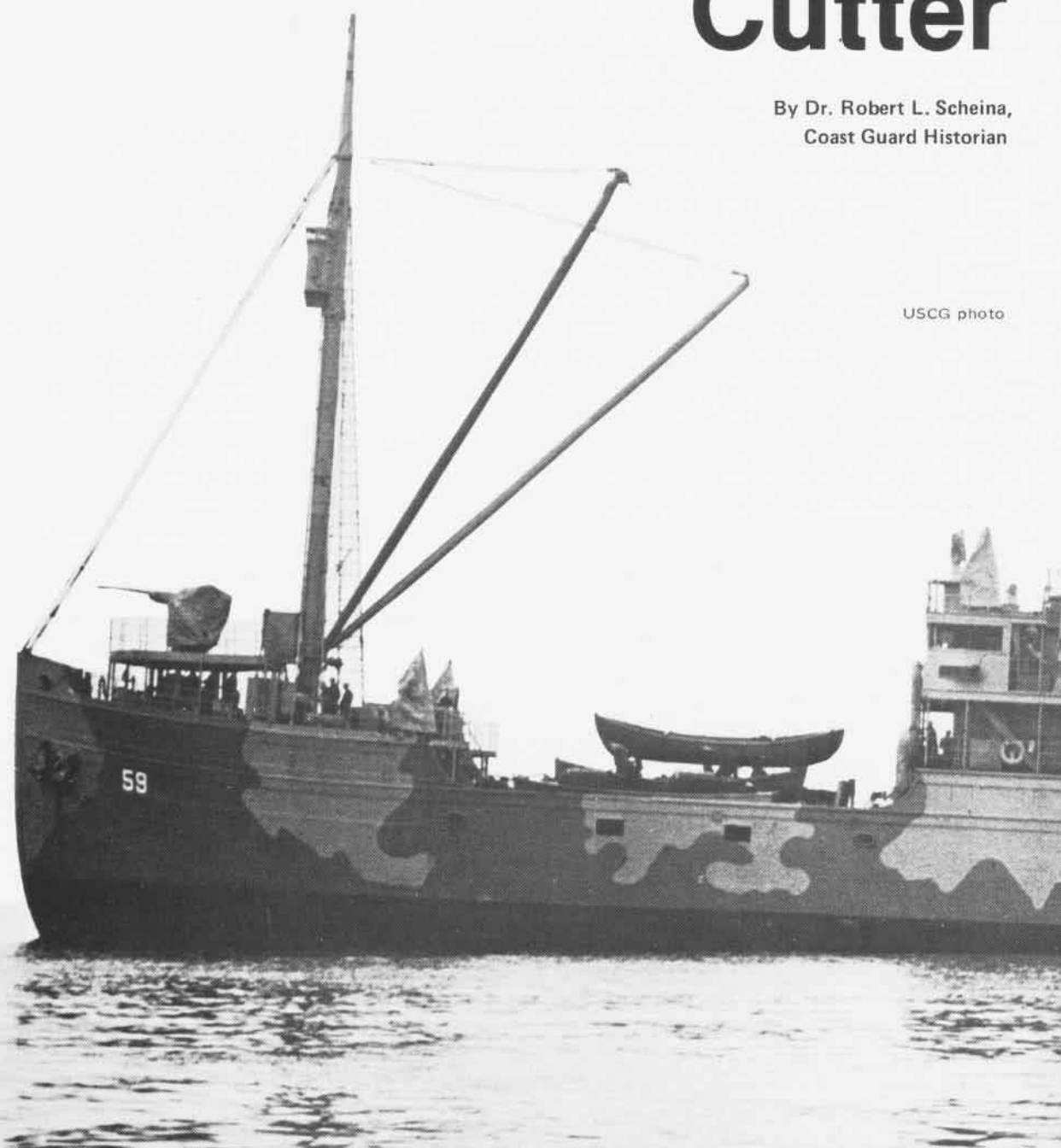
In the event of an accident, the nearest Coast Guard air station was ready with immediate assistance. In 1938, 14,000 reports on plane traffic were made by Atlantic Coast stations. As new air stations were established, the system was gradually extended to the Gulf and Pacific Coasts.

Coast Guard cutters and shore stations were no longer individual entities. Aerial reconnaissance had become a necessity throughout the Service and the new chain of air stations along the coast served as vital links between all units of the Coast Guard — carrying on the traditional and time-honored duty of the Service, to protect life and property. ■

The Marriage of Fixed-Wing Aviation and the Cutter

By Dr. Robert L. Scheina,
Coast Guard Historian

USCG photo



The concept of operating aircraft from U.S. Navy ships at sea had made great advances for two decades before circumstances prompted the U.S. Coast Guard to develop its own unique brand of naval aviation in the mid-1930s. With large, flat-topped ships the Navy was able to launch and land aircraft, while underway, with relative ease during those early years. The problems faced by the Coast Guard were quite different, however, because its ships were mostly small coastal patrol cutters.

The aircraft and the cutter were teamed for the first time in 1936 when the first 327-foot Coast Guard cutter was commissioned.

At that time, opium smuggling was increasing on the West Coast. Freighters coming from the Orient dropped

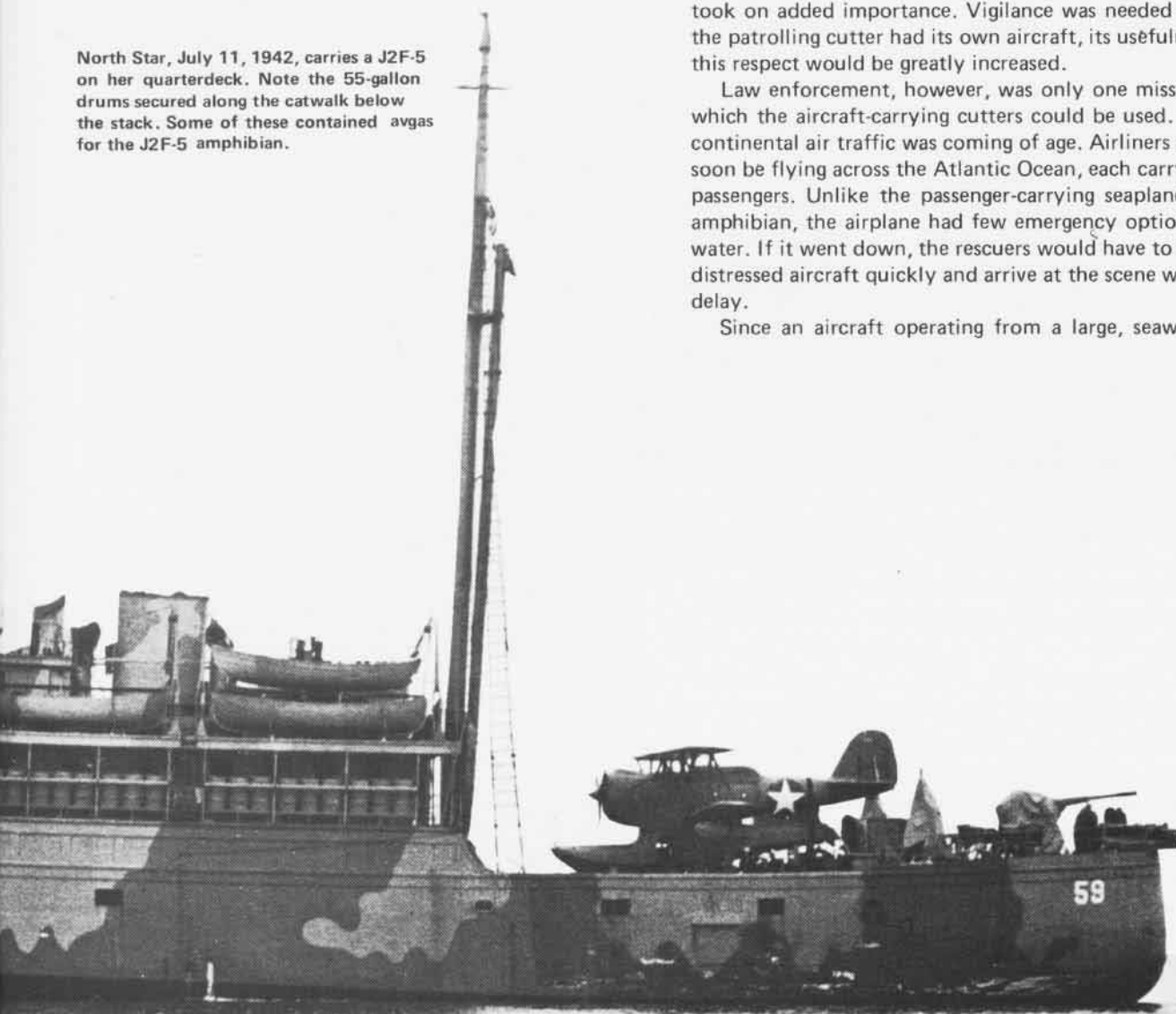
drugs far offshore in watertight containers which were picked up by small coastal utility, fishing or pleasure craft, or perhaps seaplanes. The Coast Guard had built fast patrol boats to guard these coastal waters, but the drop areas were moved farther and farther out to sea. By the mid-1930s, the best solution to the problem of interdicting drug traffic was a large cutter carrying its own reconnaissance aircraft.

In addition to dealing with elusive smugglers, the Coast Guard needed the cutter-aircraft team in Alaska. For many decades following the purchase of Alaska in 1867, the cutter had been recognized as the law — police station, courtroom and jailhouse. Throughout the late 19th century, cutters patrolled the Bering Sea, particularly looking for illegal sealers. The Japanese had terminated a number of fishing treaties and, as tensions grew between Japan and the United States during the 1930s, these northern waters took on added importance. Vigilance was needed and, if the patrolling cutter had its own aircraft, its usefulness in this respect would be greatly increased.

Law enforcement, however, was only one mission for which the aircraft-carrying cutters could be used. Inter-continental air traffic was coming of age. Airliners would soon be flying across the Atlantic Ocean, each carrying 40 passengers. Unlike the passenger-carrying seaplane and amphibian, the airplane had few emergency options over water. If it went down, the rescuers would have to find the distressed aircraft quickly and arrive at the scene without delay.

Since an aircraft operating from a large, seaworthy

North Star, July 11, 1942, carries a J2F-5 on her quarterdeck. Note the 55-gallon drums secured along the catwalk below the stack. Some of these contained avgas for the J2F-5 amphibian.





Top, gripped down and secured in its cradle, a J2F-6 is ready for the hard Greenland climate on board *Storis*, August 25, 1945.

cutter offered the best rescue platform, the 327-foot class was built to meet these needs. Preliminary requirements of the design were that it be capable of 20-knot speeds and carry an amphibian in a hangar. At first, the Coast Guard modified the plans of the 250-foot cutter, 10 of which had been built between 1928 and 1932. This modified design was compared to an *Erie*-class gunboat the Navy was then developing. The Navy design proved superior and was adopted. The machinery plant and hull below the waterline were identical to the Navy plans. However, above the waterline, the 327 design was uniquely Coast Guard.

The aircraft, of course, had to be an amphibian, and would take off from and land in the water. It was lifted to and from the cutter by a large boom supported from the aft goal post. Compared to the catapult system, this method of operation was simpler and weighed much less.

Between 1937 and 1941, a variety of aircraft operated from the 327s. Usually, an aircraft would be assigned to a cutter for a number of months while the ship was employed on a particular mission. Typical of such duty was the Bering Sea Patrol. For example, *Spencer* received a Waco/J2W-1 in 1937 which was one of three that the Coast

Bottom, a Grumman J2F-5 returns to USS *Northland* in the North Atlantic on June 18, 1944, and waits to be towed alongside the cutter in order to be hoisted on board.



Guard acquired that year. J2F *Ducks* were assigned to *Taney* in 1937 and to *Alexander Hamilton* and *Spencer* in 1938, 14 of which were obtained in the mid-1930s. SOC-4 *Seagulls* were assigned to *Bibb* in 1938 and *Duane* in 1941. They were the last aircraft to operate from a 327, aboard *Spencer*, which surveyed parts of Greenland. The United States undertook the protection of the large island after the German invasion and occupation of Denmark. In the spring of 1940, the Secretary of the Treasury ordered the Coast Guard to survey the west coast of Greenland, and *Duane* was equipped with an aircraft to look for potential airfield sites.

The war stalled further development of the concept. The 327s lost their aircraft at the beginning of WW II when cutters proved to be excellent convoy escort ships. Also, while cutters carrying aircraft were most needed in Greenland waters, the 327s were not good iceboats. Therefore, they were armed for antisubmarine warfare and used in this role during the early days of WW II. The large quarterdecks, which had been used to stow the aircraft, were fitted with five-inch, 51-caliber guns, long-depth charge racks and K-guns.

USCG photo



Right, Lt. John A. Pritchard, USCG, looks on as his plane is readied on board *Northland*. He and Radioman Benjamin A. Bottoms, USCG, lost their lives in December 1942 while rescuing downed aviators on the Greenland ice cap. They were awarded the Distinguished Flying Cross posthumously.

German weather stations were operating in the frozen north, providing critical data to the U-boats. Ice-breaking cutters equipped with aircraft would be the answer in dealing with these enemy facilities. The aircraft not only could locate the enemy station but also help the cutters pick their way through the ice fields. However, such cutters would take three years to build and the need was immediate.

At the beginning of WW II, the U.S. did not own a single icebreaker. In fact, as war spread in Europe, the Coast Guard tried to lease a Russian icebreaker. However, the German invasion of Russia brought negotiations to an abrupt end. Ships had to be adapted to this role until the new ice-breaking gunboats could be built. As with all emergency measures, the best available was not ideal. The closest thing to an icebreaker was the Coast Guard cutter *Northland*, which had been constructed in the mid-1920s to replace the venerable *Bear*. She was designed to serve in Alaskan waters and was an ice-going gunboat. When completed, she had no accommodations for aircraft; in fact, she carried sails for emergency power should her single propeller be damaged in the ice.

In 1941, *Northland's* heavy masts were reduced and she was fitted to carry an aircraft on her quarterdeck. Another cutter adapted to carry an aircraft was the wooden-hulled *North Star*, acquired by the Coast Guard in May 1941 from the Department of the Interior. She was built in 1932 to serve in Alaskan waters. A third cutter modified to carry an aircraft was the 230-foot *Storis*, built during the opening days of WW II to serve as a supply ship for remote Greenland stations. All three cutters were modified to carry a J2F-5 *Duck* on their quarterdecks. In all cases, the plane had to be lifted on and off the cutters by booms. These cutters, along with the old *Bear*, which was in naval service during WW I, were very much a part of the Greenland Patrol until the *Wind* class was commissioned.

The *Wind*-class cutters were designed specifically as aircraft-carrying, ice-breaking gunboats for Greenland duty and destined to replace the collection of makeshift aviation cutters. The *Winds* were the first cutters to be equipped with catapults and each carried a J2F. Initially, four *Wind* units were built for the Coast Guard, three of which were transferred to the Soviet Union under lend-lease before the close of the war. One replacement was built for the Coast Guard and two for the Navy. In total, seven *Wind*-class ships were built.

The Coast Guard's ultimate aircraft-carrying cutter was to have been the 255-foot class. As the follow-on to the 327, she was to have carried a catapult-launched aircraft. However, due to wartime construction demands and technological changes, the new cutters resembled the *Wind* class more closely than they did the 327s. During the final design stages, the capability to carry an aircraft was dropped, since the ships had developed a tendency to keel over and topside weight had to be reduced.

The marriage of fixed wing aircraft and the cutter lasted slightly more than a decade. Fixed wing aircraft on small vessels were destined to be replaced by helicopters. Today, all medium and high-endurance Coast Guard cutters are routinely equipped with helicopter pads, which is testimony to the great value of small-deck naval aviation. ■

Icebreaker



The ice condition was inspected after CGC Polar Star cut the channel into McMurdo Station during Deep Freeze '83. Mt. Erebus ascends to 13,000 feet in the background.

Flying

By Commander Pat Wendt

*Guess what, I got my orders today.
Well, don't keep me in suspense. Where are you going?
Promise not to laugh?
Sure, now where are you going?
Mobile, Alabama, to fly helicopters off icebreakers!*

This conversation raises the obvious question, "What kind of cold weather flying is done in Alabama?" Interestingly, Mobile has been the Coast Guard's center for polar operations for some time.

Prior to the mid-sixties, the Navy and the Coast Guard had icebreakers that shared ice-breaking duties in the Arctic and Antarctic. Navy helicopter crews shared the task with Coast Guard crews, who were usually taken from units nearest the ship's home port. By 1966, all of the icebreakers were in Coast Guard hands and, in 1969, the Icebreaker Support Section — now called the Polar Operations Division (POPDIV) — was established in Mobile at the Coast Guard's new Aviation Training Center, to provide helicopter support to deployed icebreakers. Helicopter crews for icebreakers are formed out of the nucleus of talent assigned to POPDIV, which includes 17 officers and some 48 enlisted crewmen.

Mobile was chosen as the home for icebreaker helicopters and their training facilities for several reasons. The Aviation Training Center had room to grow and the helicopters, when not deployed, could be used as training platforms, thereby making maximum use of the resources. Mobile is located in an area of relatively good flying weather for training and is centrally located for ferrying aircraft, and transporting men and equipment to icebreakers on each coast. And, surprisingly, near Mobile there were facilities for cold-weather survival training at the Eglin Air Force Base Environmental Hangar in Florida, where helicopter crews could try out their cold-weather equipment in minus-45-degree temperatures and learn such things as how to build snow shelters. A new and more comprehensive Polar Survival School has recently been

established in Colorado in place of the Eglin "Cold Chamber" but, in the beginning, the Icebreaker Support Section in Mobile answered the need.

Helicopter detachments, which are essentially mini, self-contained units assigned to icebreakers, are formed five weeks prior to deployment with four pilots and 10 aircrewmembers, and two HH-52As. (In 1985, the venerable Sikorsky HH-52A will be replaced by the Aerospatiale HH-65A *Dolphin*.) In preparation for months of flying in some of the world's most hostile conditions, scheduled maintenance that will fall due during deployment is completed early and high-time components are changed to reduce the possibility of failure while far from supply support facilities.

During the workup period, the crew learns to function as a team, honing their skills in actual flight deck operations. Landing signal officers and tiedownmen are trained to perfect their skills in such things as manual blade folding evolutions. The exercises are repeated until everyone can do the job in 40-knot winds and sub-zero temperatures. The crew also inventories the helicopter support kit which is a supply store for extended deployments.

About a week prior to deployment, the crew and their gear are trucked to the ship which may be at East or West Coast locations. After all the equipment is aboard, the helicopters are the last to arrive, normally a few days before getting underway.

The tour length at POPDIV is three years for pilots regardless of time at sea, and 12 months at sea for aircrewmembers. Since trips to the Arctic East region (see "Up Over and Down Under") are normally three months long, Arctic West four months long and Antarctic trips six

months, it is possible to visit each area in a tour of duty.

To prepare for these "up over" and "down under" flying missions, all personnel assigned to POPDIV begin with two weeks of intensive training that takes them from the Gulf of Mexico to the mountains of Colorado. The training includes nomenclature, cold weather and mountain flying, aircraft fuel handling and icebreaker helicopter operations, to name a few. Field exercises are conducted in fighting aircraft fires, underwater egress procedures, use of firearms and polar survival. Underwater egress is taught at NAS Pensacola, Fla., using Naval Aviation Training Command facilities.

Polar Survival School is a week-long course in the Colorado mountains, designed to simulate the worst conditions that could be encountered in polar flying. Three days of classroom instruction are conducted at the 9,000-foot level to acclimatize to the altitude. This is followed by a four-day field exercise at 12,000 feet using the equipment in the polar survival kits which are carried on each Arctic mission. Each class is limited to four people to simulate an actual situation. A solo survival training phase occupies the last 24 hours and the only gear a person can take with him is the clothes he is wearing and three matches, no sleeping bag and no watch. It's a real final exam and is quite an incentive to pay attention in class. Those who have completed the school rate it among the best they've ever attended — a never-to-be-forgotten experience.

Training must satisfy all flight crew minimums. For example, pilots must be aircraft commanders, since most flights are conducted by a single pilot, to allow for crew rest during periods of sustained 24-hour operations. All aircrewmembers should be qualified flight mechanics.

While there are five ice-breaking cutters that sail with helicopter crews, there are only enough people to man four detachments. Normally, the icebreakers go to the Arctic during the summer months in the northern hemisphere, sometime between March and October. The Antarctic icebreaker mission lasts from November to April, which is the southern hemisphere's summer. Both areas, during their respective summers, enjoy 24 hours of daylight and better weather conditions which allow resupply and scientific efforts around the clock. The perpetual winter darkness used to offer a respite for those icebreakers not engaged at the other end of the world; hence, rarely were there more than three icebreakers deployed at any one time. Recently, however, there has been a surge in interest to un-

cover the secrets of these frozen frontiers, which has resulted in increasing demand for icebreaker time. POPDIV may therefore grow out of necessity.

Of the five icebreakers that carry helicopters to the Arctic and Antarctic, the newest are the Coast Guard cutters *Polar Sea* and *Polar Star*. Although they are the largest, at 399 feet, and most powerful, with diesel as well as three massive jet engines, they carry the smallest crews. They are home-ported in Seattle, Wash. Next in size is the 310-foot *Glacier*. Home-ported at Long Beach, Calif., she is one of a kind, has the largest crew of any Coast Guard cutter, and is the only icebreaker left that once belonged to the Navy. The remaining two are the oldest and the smallest, 269 feet. *Northwind* and *Westwind* have been the workhorses of the icebreaker fleet since the late forties and early fifties. Their sister cutters, *Southwind* and *Eastwind*, were dismantled several years ago and probably made into automobiles, razor blades, etc. Wilmington, N.C., is *Northwind's* home port and, in June 1982, *Westwind* was moved from Milwaukee, Wisc., to Mobile, Ala., to assist in drug interdiction efforts in the Gulf of Mexico and Caribbean.

Normally, *Northwind* and *Westwind* deploy to the Arctic East region. *Glacier* deploys to the Antarctic, and *Polar Sea* and *Polar Star* alternate between Arctic West and Antarctica.

Assignments in icebreaker flying have many benefits. Stops on the way to and from operating areas are half the fun. Arctic East ships have visited ports in eastern Canada, Iceland, Scotland, England, Norway, Denmark, France and Portugal. One even visited Murmansk, Russia. Arctic West trips aren't quite as romantic but stops in the Aleutians, and Nome, Juneau and Point Barrow, Alaska, can be interesting. Port calls en route to and returning from Antarctica are eagerly anticipated — Hawaii, South Sea Islands, Australia, New Zealand, Chile, Mexico, Peru, Panama, Argentina, Brazil, Venezuela and islands in the Caribbean.

However, the good times don't last long. The flying is difficult and challenging but immensely rewarding. On a clear day, it appears one can reach out and touch a mountain a hundred miles away. But when it's possible to "see forever," altitudes and distances are dangerously deceptive. Fog can roll in on a moment's notice and whiteouts are commonplace. Winds are unusually strong and gusty, unpredictable and especially treacherous in the mountains. Flight planning becomes an art. Continuous attention to detail and patience become bywords.

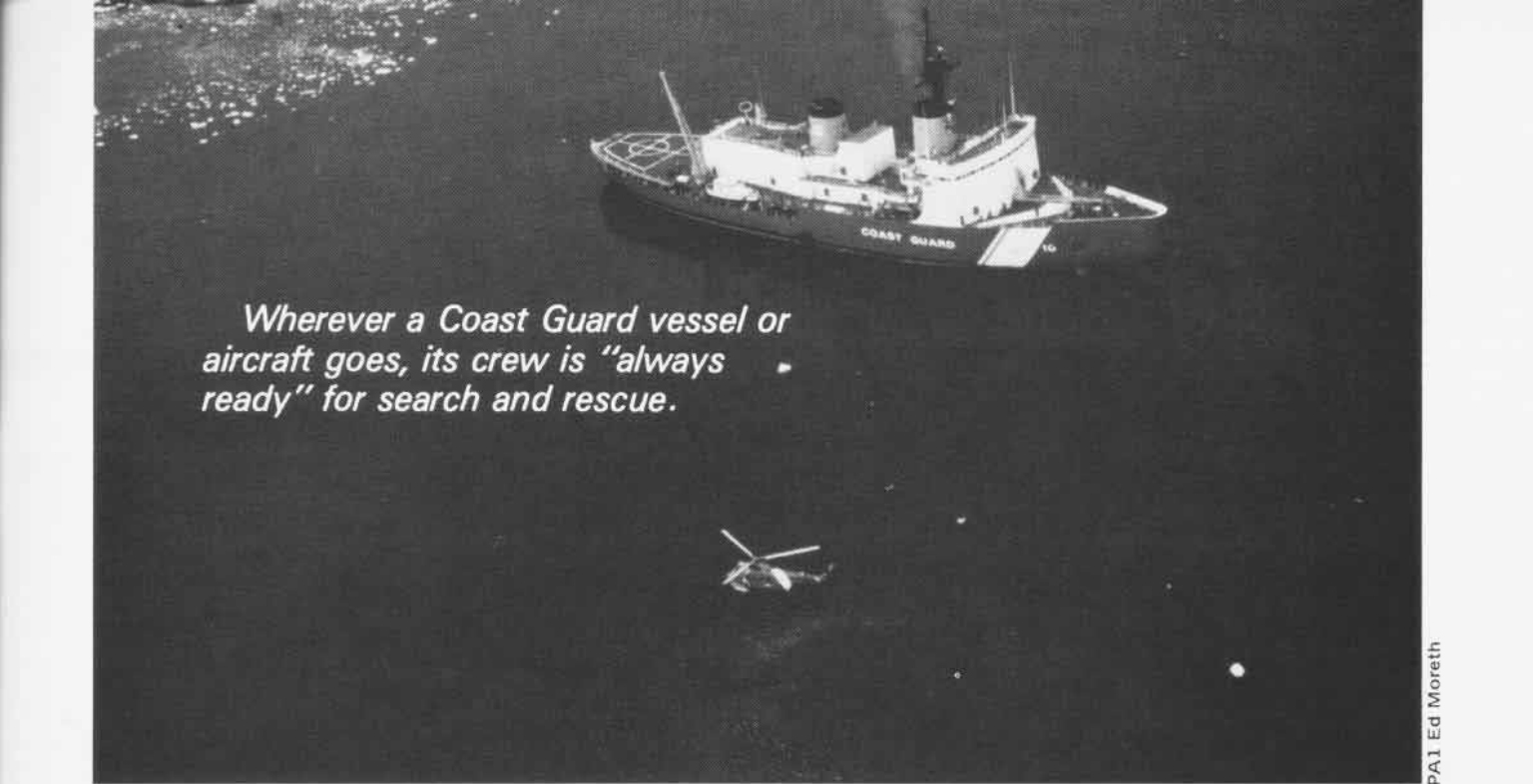
The rewards are magnificent vistas and panoramas, that steal one's breath, and a land that few, if any, men have ever touched. It is an experience like no other to watch a bald eagle fetch a salmon from an Alaskan stream, to follow a polar bear and her cubs rambling across an endless sea of ice, to witness a killer whale nudging an ice flow to dislodge a penguin dinner, to pass lumbering walrus sunning on teetering ice flows, to view Arctic wolves stalking the swift caribou herd, to share the joy of discovery with scientists of nearly every discipline and, in the darkness of early and late winter trips, to witness the splendor of the aurora australis and aurora borealis sparkling across the sky. It is truly the kind of adventure not easily forgotten.

Cdr. Wendt is presently Chief of the Polar Operations Division, Aviation Training Center, Mobile, Ala.

The Navy's Antarctic Squadron

Antarctic Development Squadron Six (VXE-6) is a vital element of Operation *Deep Freeze*, the U.S. Antarctic Research Program which is funded and operated under the auspices of the National Science Foundation. Along with the Naval Support Force, Antarctica, and units of the Coast Guard, Air Force and Army, VXE-6 is dedicated to supporting exploration and scientific research in Antarctica.

Through the use of its LC-130s and UH-1Ns, the squadron has revolutionized air operations at the South Pole. These aircraft provide a flexibility and speed of operations that no other nation has and make VXE-6 an integral part of the logistic support for U.S. scientific research.



Wherever a Coast Guard vessel or aircraft goes, its crew is "always ready" for search and rescue.

Polar Star is assisted by a helo during resupply of Palmer Station, Antarctica, Deep Freeze '83.

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Up Over and Down Under

By Commander Pat Wendt

The mission of the icebreaker helicopter units is to support the icebreakers wherever they may go. And they go, literally, to the ends of the earth. There are generally three operating areas: Arctic East, Arctic West and Antarctica.

Arctic East can loosely be described as the area north of the North Atlantic sea lanes from the eastern Canadian Arctic to northern European coastlines. It includes the North Atlantic Ocean, Denmark Strait, Davis Strait, Baffin Bay and the Arctic Ocean north of Greenland, Iceland and other island groups within the Polar Sea. Greenland, around which most of Arctic East activity takes place, is considered the world's largest island. It is covered with a massive ice cap that is several thousand feet thick. The pressure of the ice cap over many years has depressed the island's center and created magnificent coastal mountains sliced by forbidding fjords. Glaciers build in the mountains and slowly spill toward Baffin Bay, breaking off in huge chunks the size of battleships and 10 times as deep. One such iceberg sank the *Titanic*. In WW II the fjords hid many a landing field that supported the North Atlantic supply route to the Allies. Picturesque Danish villages and stark military installations now dot the coast. The icebreakers are used for resupply, to repair and replenish navigation aids, and as a platform for oceanographic and other scientific activity. The helicopters have been used to land glaciologists high on the massive ice formations to measure their progress, mark icebergs, haul personnel and cargo, and to locate leads in the ice fields through which the ship can travel. Crews have to be on their toes particularly for rapidly forming fog that reduces visibility to zero zero.

Arctic West comprises that area north of the Aleutians, bordered on the west by U.S.S.R. territorial waters and on

the east by Alaska and the western Canadian Arctic Archipelago. It includes the Bering Sea, Chukchi Sea, Beaufort Sea and the Arctic Ocean. The north slope of Alaska is the land limit of the American western frontier. It's a vast, rugged land rich in resources which, in recent years, has exploded in exploration and fisheries' activities. From the beginning, Coast Guard icebreakers cut barge channels through the ice to build the north slope oil fields and have continued to assist when needed. They primarily serve as platforms for ongoing scientific research into the unspoiled environment to develop means to prevent exploitation and protect its beauty. They service aids to navigation along the coast but have no recurring resupply function for coastal military units, which is the primary mission for Arctic East.

The Antarctic mission, or Operation *Deep Freeze*, is the dream of most icebreaker aviators. The Antarctic area is all the land, sea and ice south of the roaring forties (parallel), that globe-encircling imaginary barrier that can be said to protect the beauty and charm of the land beyond. It's a land over which no country is sovereign and science is king. Its cloud-piercing mountains seem gently subdued by an endless blanket of snow. Yet there are stark contrasts like the Dry Valley areas, for instance, which remain free of snow the year round. The traditional icebreaker mission is to break a channel through the ice pack for the resupply ships to reach McMurdo Station, the largest settlement in Antarctica. From McMurdo, the scientific activities of nearly all U.S. Antarctic stations are managed and resupplied. The icebreakers also serve as platforms for the seemingly endless deciphering of nature's secrets. The helicopters offer access to every nook and cranny of the Antarctic wonderland. ■

Lifesaving the Hard Way



By Lieutenant Junior Grade
Deborah A. Dombeck, USCG

Around Coast Guard Air Station, Barbers Point, Hawaii, Lieutenant Commander Tony Meader is known as *SAR Man*. It is a nickname pinned on him by his fellow Coast Guard personnel who have come to admire his skills, leadership, dedication to duty and courage.

In a recent 13-month period, Meader and his HH-52A crew rescued 34 persons. Meader isn't keeping count. To him, each case is a total crew effort. "I only did what I was supposed to do," he says. Meader is engineering officer at Barbers Point and has over 3,700 combined hours in the HH-52A helicopter, and C-131 and HU-16 fixed wing aircraft.

While he has had his share of heroic rescues, Meader has especially vivid memories of the first person he saved. "I can work for 20 years just on those feelings alone," he says. Just out of

flight school, nearly 14 years ago, then Ltjg. Meader was assigned as a copilot at Coast Guard Air Station, Port Angeles, Wash. A fishing boat, located across the Strait of Juan de Fuca, was taking on water and sinking with four people on board.

Within 15 minutes, Meader, the pilot, and crew were on the scene in their HH-52A. One of the men was safe in a small boat. But when they hoisted the others, two were dead and the third, a woman, was barely alive. Meader and a crew member immediately administered first aid. "I can still remember her face, her expression. She looked up at both of us and said thank you," he recalls. That experience had a lasting impact on his life, just as it has had on many others involved in lifesaving.

Since arriving at Barbers Point nearly two years ago, the soft-spoken Meader has lived up to his reputation as a superb aviator. In one SAR case, he and his crew rescued 13 survivors from a sailboat that went aground at the entrance of the Ala Wai Boat Harbor Canal in Waikiki.

But his most challenging rescue was last October. A young woman was stranded on a ledge at the base of a cliff on the north shore of the Island of Kauai. A previous attempt to help was made by a man who had been swimming in the area, which resulted in his becoming trapped also on the ledge.

Local firemen were first called to the scene. On the beach nearby they were unable to reach the two because of the pounding surf below the ledge, so they notified the Joint Rescue Coordination Center in Honolulu.

Within minutes, Coast Guard helicopter CG 1462 was launched with Lt.Cdr. Meader as aircraft commander. When he and his crew arrived at the scene, it was already dark. The night was cloudy and moonless and the wind



Lt. Brian Cost

Lt.Cdr. Tony Meader

was from the northeast at 10 knots, with gusts and treacherous downdrafts around the cliffs in the area. The surf was rough and averaging around four feet along the jagged coastline.

From radio contact with the firemen, the crew of 1462 learned that this particular ledge was at the base of a cliff with an overhang of 75 to 100 feet. The overhang formed a shallow cave around the ledge where the two people were stranded.

Meador, using a high intensity searchlight, surveyed the area around the ledge to get a better perspective

of the situation and the hazards involved. It was obvious that the overhang would prevent any attempt to hoist the two from the ledge directly. Swimming was out of the question with the high surf.

Meador landed CG 1462 at the nearby beach where the firemen were waiting. The landing was not easy since the beach was steeply inclined and very narrow, and there was little available light. The firemen provided information about the local weather and sea conditions, and the previous rescue attempts. They agreed on a plan of action and the firemen gave the 1462 crew 300 feet of line.

Meador knew that the only way to get the two off the ledge was to float a raft to the couple and tow them to calmer waters. Once clear, they would then be hoisted aboard. It seemed very logical and clear-cut, but it was dark and windy and the surf was pounding on the rocks below.

In the cabin of the helicopter, the copilot Lieutenant Andrew Moynahan and aircrewman Charles Warren prepared three rafts. They remained aft in the aircraft making rescue preparations while Meador maneuvered the HH-52A as close as possible to the overhanging cliff. He kept the helicopter in position while his two crewmen prepared to lower the first raft. During this phase, the downdrafts from the cliffs threatened the hovering helicopter. Meador was able to use only the small light on the nose of his aircraft to illuminate what few references were available.

Moynahan and Warren deployed the first raft, only to see it destroyed by the angry surf. Undaunted, they lowered a second raft, making sure the lines were taut and doubled. This time they successfully let the surf carry it to the couple. "I don't know what we would have done had we lost the rafts," recalled Moynahan later, "and

I'm glad we didn't have time to think about it."

This time the two stranded people were able to grab hold of the raft, after which Meador slowly maneuvered his helicopter away from the cliffs to open water while pulling the raft away from the ledge.

Each time a wave approached the raft, Meador had to pause while the crew took slack out of the trail lines. Every time a wave hit the raft, however, the two victims were swamped and submerged. In order to advance at all, the helicopter had to maneuver between wave intervals, and only after the raft and the victims had surfaced. Needless to say, they only moved ahead 10 to 15 feet between waves, and sometimes lost double that amount when the raft and the victims were hit by a particularly large wave.

Nearly an hour passed after the first raft was dropped, when finally they were far enough offshore to begin hoisting the victims free of the water.

As the woman was being lifted from the choppy waves she became entangled in the trail line of the raft. Warren cut the line which freed her legs and dropped the raft down to the man in the water. The man was then quickly hoisted on board.

With the rescue complete, the survivors were flown to a nearby hospital for treatment and the crew returned to Barbers Point.

The success of that night's rescue can be attributed to Meador's ingenuity, skill and courage. But he sees it as "just doing my job" — a job he thoroughly enjoys.

Meador's accomplishments as a pilot have earned him many awards. But to him these aren't the real rewards. He says, "There is so much more than just the ribbons and medals. If you have ever helped save a life, that justifies everything else." ■



USCG photo

By Sandy Russell

Doctors on the

Finding a good doctor in the Coast Guard is no problem. In fact, they'll find you if you are the victim of a boating accident or in need of emergency treatment offshore.

In the business of search and rescue, Coast Guard flight surgeons are able to make house calls at sea because they are specially trained to deal with the anomalies associated with medevac operations and aviation medicine. Theirs is a vital role in the Coast Guard's lifesaving mission. Their importance is reflected in the fact that their uniform breast insignia is one of only three *wing-type* devices being worn in the Coast Guard today. The other two are Naval Aviator and Naval Aircrewman.

Over one-half of the Coast Guard's physicians are flight surgeons or aviation medical officers. Their spe-

cialized knowledge and unique contributions are vital to the Coast Guard Aviation community's mission.

Coast Guard flight surgeons come from several different training programs. Some graduate from the flight surgeon schools of the Navy, Air Force and Army at NAS Pensacola, Fla., Brooks AFB, Texas, and Fort Rucker, Ala., respectively. Others receive their training at the Coast Guard's Aviation Training Center, Mobile, Ala.

The training varies from school to school. One example is the Navy's program at Pensacola's Naval Aerospace Medical Institute (NAMI). After a physician completes medical school and internship, he may apply to become a flight surgeon. If accepted, he goes to NAMI for seventeen weeks of academic work and seven weeks of

flight training in the T-34C *Mentor*. In the academic phase, emphasis is placed on the various specialties that are important in aerospace medicine, such as ophthalmology/optometry, otolaryngology and cardiology. Finally, student flight surgeons receive the same land and sea survival training and primary flight training in the T-34C that are given to student Naval Aviators.

Aviation medical officers are graduates of a four-week program at Pensacola. They occupy nonflying billets at Coast Guard support centers, where they conduct flight physicals and serve as physicians for the aviators assigned to district offices.

All physicians, dentists, pharmacists and some other medical personnel in

has the intellectual challenge of accident investigation and prevention." By examining the human factors in these operations, the flight surgeon helps safety officers in their efforts to prevent mishaps. He is the resident expert in occupational medicine as well as aviation medicine.

Besides the primary-care tasks of a physician, the flight surgeon performs many diverse functions as a member of the aviation community. For example, he participates in all of the operational missions of his unit, which includes taking part in small boat rescues, investigating occupational hazards for the personnel who maintain aids to navigation, and being a crew member in shipboard helicopter operations. Cdr. Moore says, "If you think night carrier operations are hairy, try landing a helo at night on a 210 [cutter]!"

One might wonder why a physician would choose a career in the Coast Guard over private practice. Cdr. Moore says that he likes the practice of military medicine particularly because he can prescribe drugs or tests which his patient needs without worrying about placing a financial burden on the patient. He also gets the opportunity to teach, which is something he personally enjoys. Flight surgeons typically lecture at safety stand-downs and are responsible for training aircrew personnel in aviation physiology. All those valuable lectures on fatigue, survival, disorientation, night vision, stress, and drug and alcohol abuse come from the Doc.

Supervising and training emergency medical technicians (EMTs) also fall under the realm of the flight surgeon's duties. These technicians assist corpsmen and physicians in emergency treatment procedures. The Coast Guard is the only service that trains virtually any rating to be an EMT, using the "C" school at Training

Center, Petaluma, Calif., and the Health Services Technician School at the Coast Guard Academy, New London, Conn. To maintain their certifications, EMTs are required to receive continuing education. Along with aviation physiology lectures, a flight surgeon provides local refresher training on gear, diagnosis of treatment, etc. The Commandant's goal is to have an EMT on every SAR case, and the flight surgeon's role is to keep the technician's skills current and supervise his activities.

When a flight surgeon participates in medical evacuation flights, his job is similar to taking the emergency room to the patient. Since the Coast Guard is the lead agency for maritime emergency medicine, this may be 100 miles offshore. If the distressed vessel is out of helicopter range, the flight surgeon may be required to manage the case by radio, advising an EMT on scene half a continent away. A medevac or rescue can turn out to be quite an exciting experience. One flight surgeon recalls the end of a rescue mission when a crewman exclaimed, "Oh, by the way, Doc, you were my first *live* hoist ever!"

Whether a flight surgeon is providing medical services during a medevac or rescue, teaching emergency care to aircrew personnel, or supporting safety officers in the investigation of aircraft accidents, his job involves a lot of responsibility. But, Cdr. Moore says, "It isn't any tougher than what the Coasties we support have to do. And we are proud to do it." ■

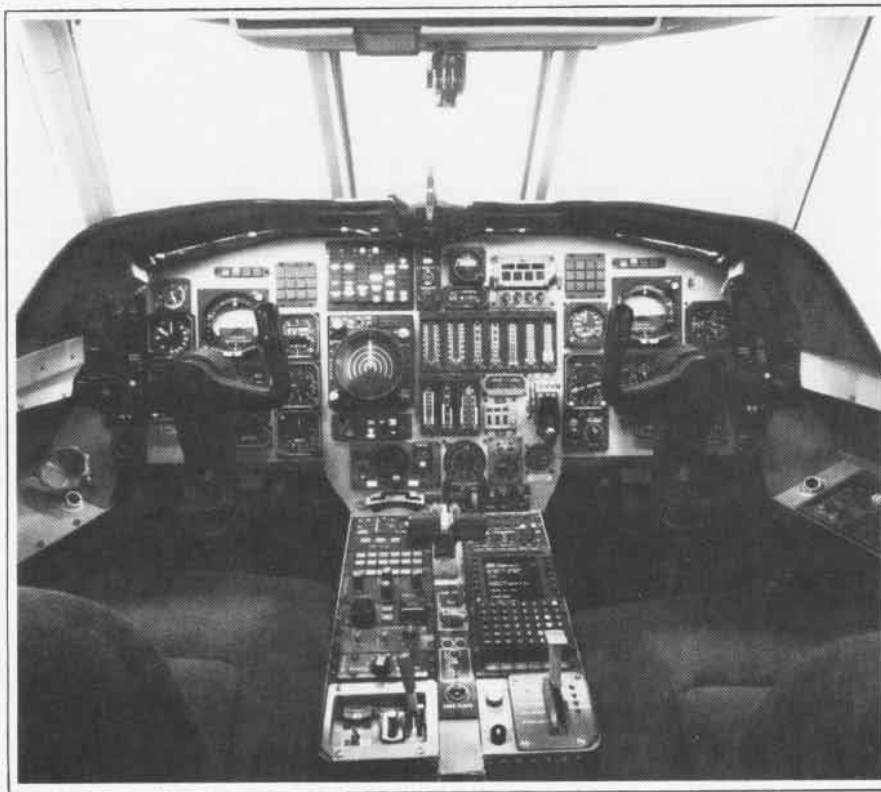
NANews wishes to thank Commander Richard Moore, Jr., Chief, Special Medical Operations Branch, Operational Medicine Division, Office of Health Services, for his valuable assistance and cooperation in the preparation of this article.

Wing

the Coast Guard receive their officer's commissions in the U.S. Public Health Service (USPHS) and wear the Coast Guard uniform. Public Health Service doctors who are not detailed to the Coast Guard are usually assigned to other branches of the USPHS, such as the Bureau of Prisons, National Health Service and Indian Health Service.

What's the difference between a flight surgeon and a regular physician? Commander Richard Moore, a former Navy flight surgeon who now heads the Special Medical Operations Branch in the Coast Guard's Office of Health Services, has an answer. "Besides the advantage of drawing flight pay, there's a chance to do exciting things, such as flying on search and rescue missions and rendering emergency services at sea." He adds, "The job also

Guardian



Guardian boasts a comfortable and well laid-out cockpit.

on Station

By Lieutenant Christopher L. Lee

The recent and long-awaited arrival of the HU-25A *Guardian*, derivative of the *Falcon 20G*, was welcomed with enthusiasm by the Coast Guard fixed wing community, since its aging air arm had acquired its last "new" fixed wing aircraft back in the 1960s. As an optimum mix of avionics and airframe, the *Guardian* is a logical evolution of its fixed wing predecessors, and is revolutionizing the manner in which traditional Coast Guard missions are carried out.

In the early 1970s the Coast Guard decided to procure a jet aircraft for its medium-range surveillance mission. After years of studying performance criteria and testing numerous aircraft, a contract was finally awarded to Falcon Jet Corporation in January 1977 for 41 aircraft to replace the aging HU-16E *Albatross* amphibians

and C-131A *Samaritans*. The basic airframe is manufactured by Avions Marcel Dassault (AMD) in France and then modified by Falcon Jet Corporation, Little Rock Division.

The operating parameters of the HU-25A are broad based and allow for a wide range of mission performance. The aircraft is capable of operating from sea level to an altitude of 42,000 feet and can be flown at maximum true airspeeds of up to 350 knots at sea level and 470 knots at 40,000 feet. Along with the ability to proceed to a search area at high altitude and dash speed, the *Guardian* is an extremely stable platform for visual search in the 180 to 200-knot range, and for delivery of pumps or rafts at 130 knots. Instrument approaches will be flown at 160 knots until intercepting the final approach course where the

aircraft will be slowed to approximately 140 knots. Maneuvering in the aerial delivery pattern — air dropping equipment — will be at approximately 160 knots with the actual drop being completed at the same 130 knots used by the HU-16E and the HC-131A aircraft.

To increase the probability of locating the search object once on scene, the HU-25A is equipped with state-of-the-art avionics, built by Rockwell International, Collins Avionics Group. This system provides precise offshore navigation, automatic search pattern generation, redundant altitude control and monitoring, and communication capabilities on all marine, aeronautical and government frequencies. All aspects of flight management are automated for increased safety and to free crew members, as much as possi-

ble, for visual and electronic search, and other in-flight duties related to the aircraft's operational missions, including search and rescue, law enforcement (marine and drug), and marine environmental response. In the predecessors of the jet, the crew sometimes spent more time computing the wind drift and course heading to be flown than they spent looking out the windows. That problem is now solved.

Lieutenant Roger Bowers, aircraft commander of HU-25A CGNR 2105, gave the first "operational" testimony in favor of the new jet. CGNR 2105 spotted a man in the water, 90 miles off the Louisiana coast on September 15. Lt. Bowers reported, "The state-of-the-art avionics played a key factor in the precise recording of the position of the initial sighting. It enabled a helicopter and surface vessel in the area to be vectored to the subject for the subsequent rescue." This precise navigation equipment, standard for the aircraft, allows the crews to execute search patterns with a degree of accuracy previously unknown to Coast Guard search and rescue operations.

The avionics system will prove invaluable in other missions as well,

such as determining areas and boundaries of fishing limits and drug interdiction.

The aircraft is 56.25 feet in length, 53.5 feet wing-tip to wing-tip, and 17.6 feet in height. Normal crew complement will be a pilot, copilot, dropmaster, avionicsman and an aircrewman. Maximum gross weight for takeoff and landing will be 32,000 pounds. Aircraft empty weight is 19,921 pounds and fuel capacity, based on JP-4, is 9,970 pounds. The payload available, including crew and expendables, with full fuel tanks, is 2,109 pounds.

Crew accommodations include conventional side-by-side pilot and copilot seats in the cockpit, left and right observer window seats, three side-facing divan seats for passengers or additional crew members, and an avionicsman seat at the rear of the cabin.

The avionicsman's position is provided for monitoring and operating communications equipment, LORAN-C (long range aid to navigation) and APS-127 search radar. The avionicsman will also control, display and record data from the Aireye package

(still under development). From this position, the sensor package will include the following: side-looking airborne radar, infrared and ultraviolet line scanner, aerial reconnaissance camera and active gated television system.

Observers are positioned in the forward section of the cabin adjacent to large search windows, one on each side of the aircraft. The viewing area of each window is unobstructed by aircraft structure and protected from fogging. The observers' seats are capable of moving left and right, fore and aft, swiveling 360 degrees and reclining to permit optimum viewing with reduced fatigue for extended periods of time.

To date, the Coast Guard has experienced growing pains typical of the introduction of any new technology, but tremendous progress has been made as engineering personnel become more familiar with the problems and corrective procedures. Enthusiasm runs high among seasoned veterans and newest Class A school

HU-25A is the first jet built to carry out Coast Guard missions.



graduates alike for the opportunity to work on "high tech" gear.

The Coast Guard Aviation Training Center in Mobile was the first unit to receive the *Guardian* and began flying it operationally on October 15, 1982, followed shortly thereafter by Coast Guard Air Station, Miami. Recently, CGAS Cape Cod began its transition to the HU-25A, which will be followed by seven other Coast Guard air stations over the next 18 months.

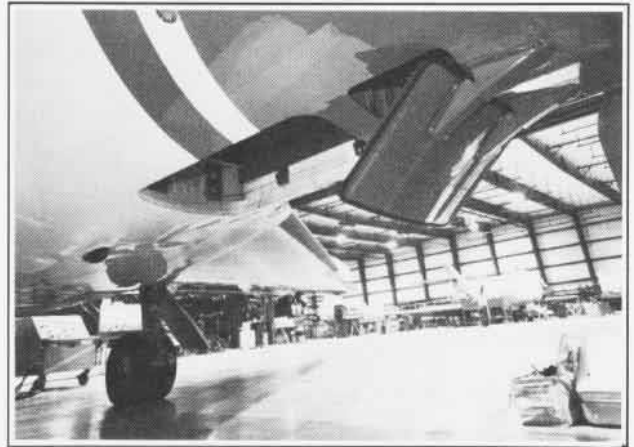
The aircraft's performance has been praised by instructor pilots of the Training Division. Although the HU-25A is radically different from the Coast Guard's old HC-130, HC-131A and HU-16E, transition to the high-speed, high-technology jet has not been a major problem. The advanced electronics and the aerodynamic quali-

ties of the airframe reduce pilot workload and crew fatigue, and make it an efficient and safe aircraft to fly.

Rear Admiral D. C. Thompson, Chief of the Office of Operations, Coast Guard Headquarters, said at the dedication of the *Guardian* in April 1982, "Comparing the HU-25A *Guardian* with its predecessors is like drawing a comparison between a Z-car and a Model T Ford. Its capabilities far surpass those of any aircraft in our inventory. Its 400-knot cruise speed can bring our crews to the assistance of those in distress in one-third the time now required. The navigation equipment that has been built into this new search platform will enable our crews to execute search patterns with a degree of precision heretofore unknown to us. . . ." ■

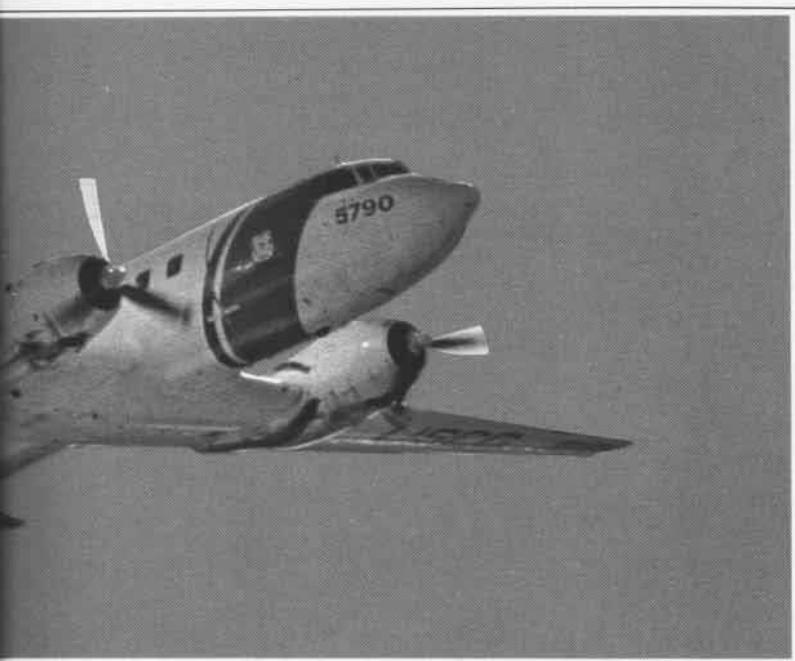
***"Comparing the HU-25A
Guardian with its
predecessors is like
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between a Z-car and a
Model T Ford."
RAdm. D. C. Thompson***

HU-25A drop hatch.



HU-25A observation window.



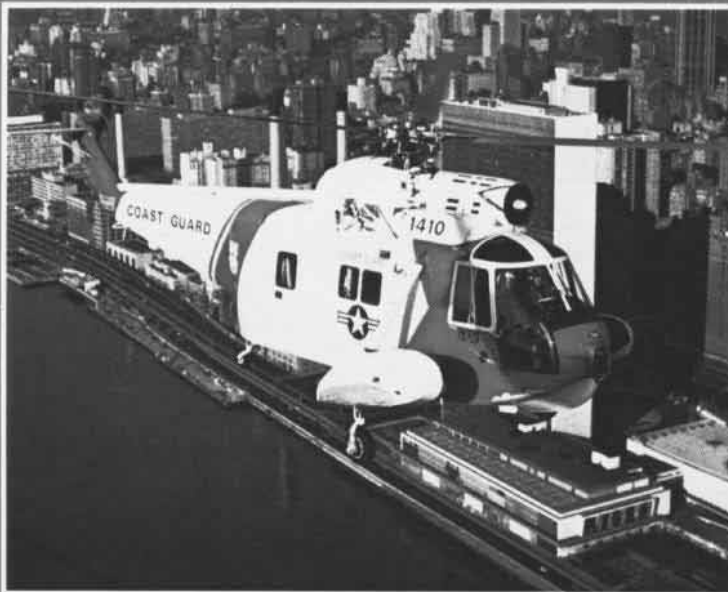


Above, the HU-16 Albatross has been an effective search-and-rescue workhorse since 1955. Left, the Coast Guard began acquiring Convair C-131As in 1976 and employed them as interim replacements for the aging HU-16s. Both these aircraft have now been retired and will be replaced by the Guardian.

HU-25A



Aircraft Specific



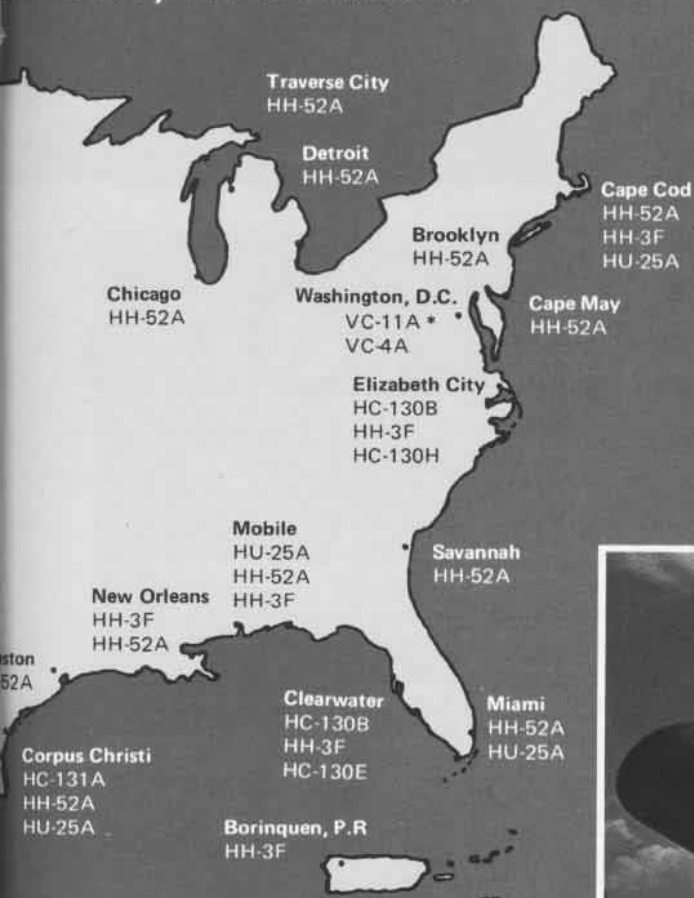
HH-52A

Model	HH-52A	HH-3F	HC-130
Length	62'3"	73'0"	97'9"
Width/Span (incl. rotor)	53'0"	62'0"	132'7"
Height	15'11"	18'1"	38'5"
Max. Gross Weight	8,300 lbs	22,050 lbs	135,000
Empty Weight	6,100 lbs	14,500 lbs	72,000
Max. Fuel Capacity	2,112 lbs	7,200 lbs	45,240
Type Fuel	JP4 or 5	JP4 or 5	JP4 or 5
Avg. Fuel Consumption	63 gal/hr	185 gal/hr	620 gal/hr
Cruise Speed	80 kts	126 kts	290 kts
Normal Endurance	3+00 hrs	3+45 hrs	8+00 hrs
Max. Speed (at sea level)	109 kts	142 kts	325 kts
Max. Range	300 nm	750 nm	2,900 nm
Normal Crew	1 or 2 pilots 1 crewman	2p/2c	2p/5c
No. and Type of Engines	(1) T-58	(2) T-58-5	(4) T-58



HH-3F

ations/Locations



The USCG's first HH-65A Dolphin will enter service in October 1983.



HC-130

HC-130H	HU-25A	HH-65A
98'9"	56'3"	43'9"
132'7"	53'6"	38'4"
38'3"	17'5"	12'6"
155,000 lbs	32,000 lbs	8,400 lbs
78,000 lbs	19,700 lbs	5,831 lbs
62,920 lbs	9,910 lbs	1,976 lbs
JP4 or 5	JP4 or 5	JP4 or 5
755 gal/hr	280 gal/hr	90 gal/hr
300 kts	405 at 40,000 ft	125 kts
11+00 hrs	5+00 hrs	3+00 hrs
325 kts	350 kts	145 kts
4,600 nm	2,045 nm	400 nm
2p/5c	2p/3c	1 or 2 pilots 1 crewman
(4) T-56-15	(2) ATF 3-6	(2) LTS-101-750

*The VC-11A and VC-4A are one-of-a-kind aircraft flown by the Coast Guard and, therefore, are not described in detail.

The once familiar sight of Coast Guard HU-16 *Albatross* seaplanes along the coasts of the United States has become a thing of the past. For the first time in almost 32 years, the Coast Guard has no HU-16 in active service. The last operational *Albatross*, CG No. 7250, made its final flight on March 10 at Coast Guard Air Station, Cape Cod, Mass.

March 10 was a typical end-of-the-winter day and the retirement ceremony brought out a large number of people to honor the stalwart veteran that had faithfully carried out its mission as a flying workhorse for over three decades.

From 1949 to 1961, Grumman produced 464 of the *Albatross* seaplanes for the U.S. Coast Guard, Navy and Air Force, as well as 16 foreign governments. The *Albatross* began its active duty with the Coast Guard in May 1951. It was liked by its aircrews, who affectionately dubbed it the *Goat*. Despite not being as sleek of line or endowed with the power of the jet, the venerable amphibian served long and well in the years that followed.

For more than one-half million flight hours, it performed a variety of Coast Guard missions. HU-16s were used extensively during the Cuban boat exodus in the 1960s and again in the 1980s. Thousands of Cuban refugees owe their lives to the men who flew the *Goats*, patrolling the waters between Cuba and Florida.

In addition to search and rescue and law enforcement missions, the *Albatross* set many amphibious aircraft records, including the highest altitude flown and the longest non-stop flight, in October 1962 from Naval Station, Kodiak, Alaska, to NAS Pensacola, Fla.

Recently, the aging aircraft proved itself again. A 20-foot motorboat was long overdue at Chatham, Mass. The Coast Guard launched a massive air-sea search involving many units,

Farewell to an Ancient Mariner Albatross

including an HU-16E. It wasn't long before the *Goat's* crew located the missing boat, adrift and dangerously close to the strong pull of the Gulf Stream. It would not have been long before the current would have swept the small boat to a point outside the search area.

Some say that the beginning of the end of the big flying boats came in the early seventies when the Coast Guard began cutting down the number of water takeoffs and landings by *Albatross* aircraft because of age, corrosion from salt water and other problems. As the seventies drew to a close, one by one the old birds began reaching their mandatory retirement age of 11,000 flight hours, a figure based on wing structure tests at the Naval Air Development Center, Warminster, Pa. Each time an *Albatross* departed for the boneyard at Davis-Monthan Air Force Base, Tucson, Ariz., those who had flown it felt that they were saying goodbye to an old friend.

On March 10, the last operational *Albatross*, No. 7250, made its final landing at Cape Cod Coast Guard Air Station where it had spent its last tour on active duty and where it will spend its retirement years in patient silence,

occupying a place of honor.

Captain Richard O. Buttrick, commanding officer of the air station, read from the orders detaching 7250 from active duty: "...Your last sortie will be a significant milestone as it will mark the close of the amphibious fixed wing chapter of Coast Guard Aviation history... You, as well as the other 87 *Albatross*, have served the United States Coast Guard



The crew who flew the *Albatross* on its last flight pose for a final photo with the retiring aircraft. Left to right, kneeling, are copilot Lt. David E. Elliott and Cdr. Eric J. Staut, pilot. Left to right, standing, are crewmen ADCM John E. Bloom and CWOs Dean A. Long and Stephen P. Marvin.





Retirement ceremonies for the aircraft mark the end of an era.

long and well. The memory of your many accomplishments will remain fresh in the minds of those who have had the honor of serving with you."

Speaking for himself, Capt. Buttrick continued, "It's like losing an old friend. I recall a time back in the mid-1960s when we were searching for a tugboat reported sinking during Hurricane Betsy. We flew out in the HU-16 and located the vessel." Buttrick and his crew maintained a vigil over the stricken vessel in spite of the hurricane until Coast Guard helicopters were able to fly out and safely airlift the tug's crew.

At the ceremony, Rear Admiral Louis L. Zumstein, commander of the First Coast Guard District, said, "I've flown 46 HU-16s in my career and they have brought me home when the odds were stacked against me several times."

The crewmen on the old amphibian's last flight were: Commander Eric J. Staut, pilot; Lieutenant David E. Elliott, copilot; Chief Warrant Officers Stephen P. Marvin and Dean A. Long; and Master Chief Petty Officer John E. Bloom. Cdr. Staut, who logged over 2,800 hours in the *Albatross*, remembered how "We asked the HU-16s to do a lot — water landings, jet-assisted takeoffs from the water or short fields, 15-hour searches, etc. The *Albatross* did it all, and more."

It is safe to say that many of those present at the retirement ceremony experienced lumps in their throats as 7250 heaved itself into the air, made a short farewell flight and then came down to rest for the last time. On display at CGAS Cape Cod, it will be a monument to Coast Guard Aviation and to those who flew the *Albatross*. ■

Although the *Albatross* will fly no more for the Coast Guard, its flying days are not over. In an agreement with Resorts International, Grumman has rebuilt five HU-16s, converting them to 28-passenger transports for inter-island commuter operations in the Bahamas and Caribbean. They have solid-state components in place of the old electrical system and are also equipped with a new avionics package and radar weather system.

Other *Albatross* amphibians are in service throughout the world, most in commercial passenger or cargo transportation. Some others may be converted for use as water bombers in fire-fighting, capable of carrying as much as 10,000 pounds of water. The tanks are refilled through retractable scoops as the aircraft skims the surface of the water. Yet another possibility is conversion to aerial ambulance duty for civil or military use.

One old Navy *Albatross*, BuNo 141266, has come out of retirement. It had been put on display in the Naval Aviation Museum at Pensacola after it was taken out of active service in 1976. In 1979, the Museum lent it to the Marine Systems Laboratory of the Smithsonian's Museum of Natural History, which needed a large amphibian for special ocean reef research projects. The Grumman aircraft rework facility in St. Augustine, Fla., refitted it and in January 1980 the freshly painted, blue and white *Albatross* with SMITHSONIAN gleaming on its side and piloted by Louis Petersen, USN(Ret.), began its new life in Atlantic and Caribbean oceanographic exploration. The Smithsonian has also obtained two more amphibians to be modified for Pacific exploration. Petersen's *Albatross* has recently moved to the cold-water reefs of the coast of Maine — and still ahead are other expeditions for the tough old seabirds.

VP Coast Guard Style

By Jess C. Barrow



USCG photos

The history of the U.S. Coast Guard in WW II is replete with accounts of heroic service and devotion to duty under the most difficult possible conditions. One such chapter recounts the story of how Coast Guard Aviators, in one inhospitable corner of the earth, assumed and carried out with great skill and courage the mission of maritime patrol traditionally assigned to the Navy.

During the early years of the war in the North Atlantic, German submarines harassed and sank Allied ships with virtual impunity. On April 9, 1941, by agreement with the Danish government, the United States undertook the defense of Greenland. The Act of Havana of July 30, 1940, had already conferred upon the U.S. the responsibility for the defense of the western hemisphere.

The Coast Guard's long association with the International Ice Patrol and the Bering Sea Patrol made that service uniquely qualified for Arctic operations. Consequently, in October 1941, Commander Edward H. Smith, USCG, was appointed overall commander for Greenland defense reporting to Commander in Chief, Atlantic Fleet.

With the entry of the U.S. into the war, the air patrol requirement in the Greenland area was greatly expanded. From this requirement was born a special patrol squadron manned entirely by Coast Guard personnel and considered by many to be the most

colorful of all the Coast Guard Aviation units of WW II.

On October 5, 1943, Patrol Squadron Six (VP-6, CG) was officially established by the Navy at Argentia, Newfoundland, relieving Navy Bombing Squadron 126. The new squadron's home base was Narsarsuaq, Greenland, code name *Blue West-One* (BW-1). Designated a unit of the Atlantic Fleet, it was under direct operational control of Commander Task Force Twenty-Four (CTF-24), with administrative control vested in Commander Fleet Air Wing Nine (CFAW-9). All personnel matters, however, remained the responsibility of Coast Guard Headquarters.

Commander Donald B. MacDiarmid, Coast Guard Aviator #59, a seasoned professional and flying boat expert, was selected to command VP-6. Thirty officers and 145 enlisted men were assigned; 22 of the officers were aviators and eight of the enlisted men were aviation pilots, most with considerable flying experience. All of the plane and ground crewmen had years of aviation service, every bit of which would be taxed to the limits during the more than two years of flying they would do in the hostile environment of the North Atlantic.

The aircraft assignment called for 10 Consolidated PBY-5A *Catalina* patrol bombers, nine to be operational, with one spare. However, because of delivery problems, flying operations

commenced with only six aircraft.

The PBY was a remarkable plane and quickly gained the respect and affection of pilots and crewmen for its rugged dependability. It could carry 4,000 pounds of bombs, two torpedoes, or four 325-pound depth charges. Cruising range at 105 knots was over 2,000 miles.

The squadron's mission was five-fold: antisubmarine patrol (ASW); air support for North Atlantic convoys; search and rescue; surveying and reporting ice conditions; and delivering mail and medical supplies to military bases and civilian villages. German U-boats were operating almost at will in the North Atlantic and the number of convoy sinkings was staggering, giving VP-6's rescue duties high priority.

As additional aircraft became available, the squadron's area of operations broadened in scope and detachments were established at several locations. Two PBYs and crews were based at Reykjavik, Iceland, furnishing air cover for Navy and Coast Guard vessels operating against the enemy and providing ASW services for North Atlantic convoys, and search and rescue operations in conjunction with the Royal Air Force Coastal Command. While carrying out their missions, these units provided their own ground support.

An additional detachment of two aircraft and crews was assigned to the

Color photos from WW II are rare. This one shows a VPB-6 Coast Guard PBV-5A (S/N 48372) on the flight line at Narsarsuaq, Greenland (BW-1) in 1944.

Canadian Arctic in support of vessels entering the Hudson Bay area during the navigation season. Antisubmarine patrols were required in the Hudson Strait, Ungava Bay and Frobisher Bay regions.

Two or more aircraft were assigned on a rotational basis to Naval Air Facility, Argentia, where all major repairs to aircraft were made. The widespread dispersal of aircraft and crews posed many administrative and logistic problems which made an already difficult situation even more unwieldy. But that was the hand VP-6 (CG) was dealt, and play it they did!

The operation was focused on Greenland, the largest island in the world, which lies almost entirely within the Arctic Circle. It is 1,600 miles north to south and nearly 800 miles wide. Eighty-five percent of the island is covered with a great ice cap of unbelievable thickness. It was not uncommon for VP-6 planes to fly thousands of miles over the ice cap under the most trying weather conditions in

a single search. Strong winds of 120 to 150 knots were a constant threat. Flying in those weather conditions, far from bases and with few navigational aids, required a high degree of pilot skill and courage. Only well-trained, savvy pilots and crews could have survived.

A search and rescue operation conducted on November 28, 1943, was typical of VP-6 operations. Several VP-6 PBVs were sent out to search a wide area for an Army aircraft reported lost. After three days of grueling search, Lieutenant Alexander W. Wuerker, USCG, located the wrecked plane on the edge of an ice cap and marked the spot with flag stakes. The rescue itself was made overland with a Coast Guard PBV from VP-6 directing the rescue party over the last 10 miles to the wreckage. Two days later, another VP-6 plane dropped provisions for the returning rescue party.

VP-6 planes often sighted stranded vessels and crews that had sometimes been adrift for weeks in stormy seas. In February 1944, one such rescue was initiated by Lieutenant Commander John D. McCubbin, USCG, on routine ice patrol in his PBV-5A. Sighting a red flare, McCubbin circled the ship and asked for identification by blinker light. The ship responded and flashed that it was the British trawler HMS *Strathella*, adrift for five weeks with two officers and 20 enlisted men aboard, who had exhausted their food and water. They were rescued through the combined efforts of another PBV from VP-6 and the

Coast Guard cutter *Modoc*. That rescue and hundreds of others were carried out by VP-6 during its 27 months of operations, frequently during high winds and near-zero visibility. During a three-month period in early 1944, for example, Lieutenant Carl H. Allen, USCG, flew more than 100 hours each month over difficult Arctic terrain to and from convoy support duty and ice patrol. One flight took him over the magnetic North Pole!

By early 1944, rapid expansion of Coast Guard Aviation had produced a shortage of seasoned pilots and crews. VP-6, therefore, had to maintain a comprehensive training schedule to ensure its crews were at peak readiness. To provide some relief for the squadron, a pre-training syllabus was set up at Coast Guard Air Station, Elizabeth City, N.C. Coast Guard Headquarters meanwhile decreed that a one-year tour of duty in Arctic regions was sufficient, and ordered that pilots and crews not requesting an extension of their tour be relieved as soon as possible. Reliefs therefore were staggered over a four-month period to permit absorption and orientation for replacements without disruption of operations.

On May 15, 1944, Commander William I. Swanston, USCG, relieved Cdr. MacDiarmid as commanding officer of VP-6, and Lieutenant Commander G. Russell "Bobo" Evans, USCG, became executive officer. By then the squadron had 12 PBV-5As with two in Iceland, two assigned to the Canadian Arctic, three at Argentia



Left, Capt. Donald MacDiarmid in 1953. Bottom, endless ice fields, ice floes and other hazardous conditions can be seen during patrol over the Labrador Sea by PBV of VPB-6 in 1944.



and five at BW-1.

Throughout the summer of 1944, the squadron was extremely busy. An expanded part of VP-6's operations involved ASW in the Baffin Bay, Davis Strait and Labrador Sea areas to protect U.S. ships transporting cryolite, urgently needed in the production of aluminum for the U.S. aircraft-building program.

To comply with a Navy directive of October 1, 1944, patrol squadrons (VP) and multiengine bombing squadrons (VB) were renamed and redesignated patrol bombing squadrons. Thus, VP-6 (CG) became VPB-6 (CG).

From September through November 16, 1944, two PBVs and their crews, commanded by Lt.Cdr. Evans, operated from Reykjavik, and provided ASW sweeps, ice reconnaissance and logistic support for a task group of four Coast Guard cutters engaged in smashing a Nazi effort to establish weather stations in northeast Greenland. In the fall, winds of gale force sometimes produced turbulence so severe that bombs had to be jettisoned.

Telling of his experiences flying from Reykjavik, former VPB-6 executive officer Captain G. R. Evans, USCG(Ret.), said, "The airport was under repair most of the time and only half of the 150-foot-wide runway was available to us. At night, we actually navigated our PBV (around obstacles) during takeoff and landing. We were motivated to achieve accuracy by the line of 50-gallon drums separating the two halves of the runway. The oil drums were virtually under one wing each time we made a takeoff or landing.

"Another time we became completely weathered out of Iceland with none of the alternates open. So, we flew all the way to Stornoway, Scotland. We arrived in a blinding rain-storm without an assigned IFF code and made our landing approach by a ground-controlled system we had never used before. Sometime later, I learned that my two crews and others in the squadron had affectionately dubbed our extensive flying program in Iceland *BoBo's Flying Circus!*"

At BW-1, surface winds were rarely less than 25 knots. The single concrete

runway had a considerable slope down from the edge of a mountain towards Narsarsuak Fjord. Thus, all takeoffs were downhill and landings were uphill regardless of the wind direction. Under inclement weather conditions, it was necessary to fly up or down the fjord at low altitudes to get in or out of BW-1. With 4,000-foot mountains on each side, it was like flying down a giant tunnel.

Recalling those days, Commander



John C. Redfield, USCG(Ret.), said, "Most of the time, our return to BW-1 during bad weather conditions was an exercise in nail-chewing, turning to stark terror! We had very few instrument landing aids. Sometimes when we were inbound up the fjord with one-quarter to one-half mile visibility, we would receive a report that another plane had just departed BW-1 on a priority flight and was outbound down the fjord. Sure was good for growing gray hair! After radar was finally installed, we were better off. We could fly up the fjord at 400 to 600-foot altitudes and negotiate the twists and turns as directed by the radar operator. At the last turn to the west, if we couldn't see BW-1, less than a mile away, we would pull up and climb out."

Lieutenant Commander William C. Wallace, USCG(Ret.), said of his VPB-6 days, "Even though there were many problems and difficult things about flying in the Arctic in those days, there was beauty unsurpassed at times, such as the aurora borealis — the Northern Lights which were beautiful and awesome with streamers of red, green and yellow across the

heavens. The stark isolation of the ragged peaks and rocks along the shorelines, the tremendous icebergs and solid ice fields stretching to the horizon, days without nights and eternal nights in winter, the nearness and remoteness of the great ice cap where depth perception was nonexistent, made lasting impressions."

Like other squadrons, VPB-6 had its characters. There were Lieutenants Harry H. "Shakey" Eckels, whom everybody teased about his red nose; E. P. "Barefoot" Ward who could never find his shoes; Frank "Wall-buster" Hodge, former football player, who lived up to his nickname; and Carl H. "Deacon" Allen and William H. "Bull" Durham who were full of humor, jokes and sea stories. They were experienced pilots and were a real inspiration to new and less experienced pilots coming into the squadron. Said one former squadron member, "Those men were the real heroes. They kept us laughing and helped to make Arctic duty bearable for everyone in the squadron."

Recreation was available at BW-1, such as movies, bowling, skiing, skeet shooting and, occasionally, a USO show. At Argentia, known as the Utopia of the North, all the comforts of the U.S. could be had — almost. Because of crew rotation, everyone usually had two visits there.

The surrender of Germany in May 1945 brought U-boat activity to a standstill. However, VPB-6's operations in search and rescue, ice patrol, logistic support of military bases, LORAN stations and civilian facilities continued unabated.

An entry on May 22, 1945, reported a typical day's operations from BW-1 after hostilities ceased in Europe: PBV-5A #46575 departed BW-1 in the early morning hours to survey ice conditions along the west coast of Greenland. En route, passengers were landed at Ivigtut. PBV #46458 returned to BW-1 with passengers and mail from BW-8. By 0800, the Army advised VPB-6 that a B-24 headed for Iceland from Goose Bay, Labrador, was in distress with two engines out. PBV #46372 responded immediately and, within one hour, the B-24 was contacted and escorted safely to BW-1.

Refueling, #46372 departed BW-1 again on ice patrol, plotted an ice navigation chart and dropped it at Ivigtut to assist a ship convoy moving down the Davis Strait. While returning from this mission, the crew received a report that an Army B-17E en route to Goose Bay from Iceland was in distress, with two engines out and a third engine smoking badly. Interception was made and the disabled plane was escorted up the 50-mile fjord to BW-1, where the third engine quit while landing. Lt. Allen, in PBY #46410, departed with 20 passengers en route to Stephenville, Newfound-

land. On his return flight he was ordered to search for another Army B-24 reported down near Port-au-Choix. Allen located the plane on a beach, landed his PBY in the water nearby, picked up the downed crew and flew them safely to Stephenville.

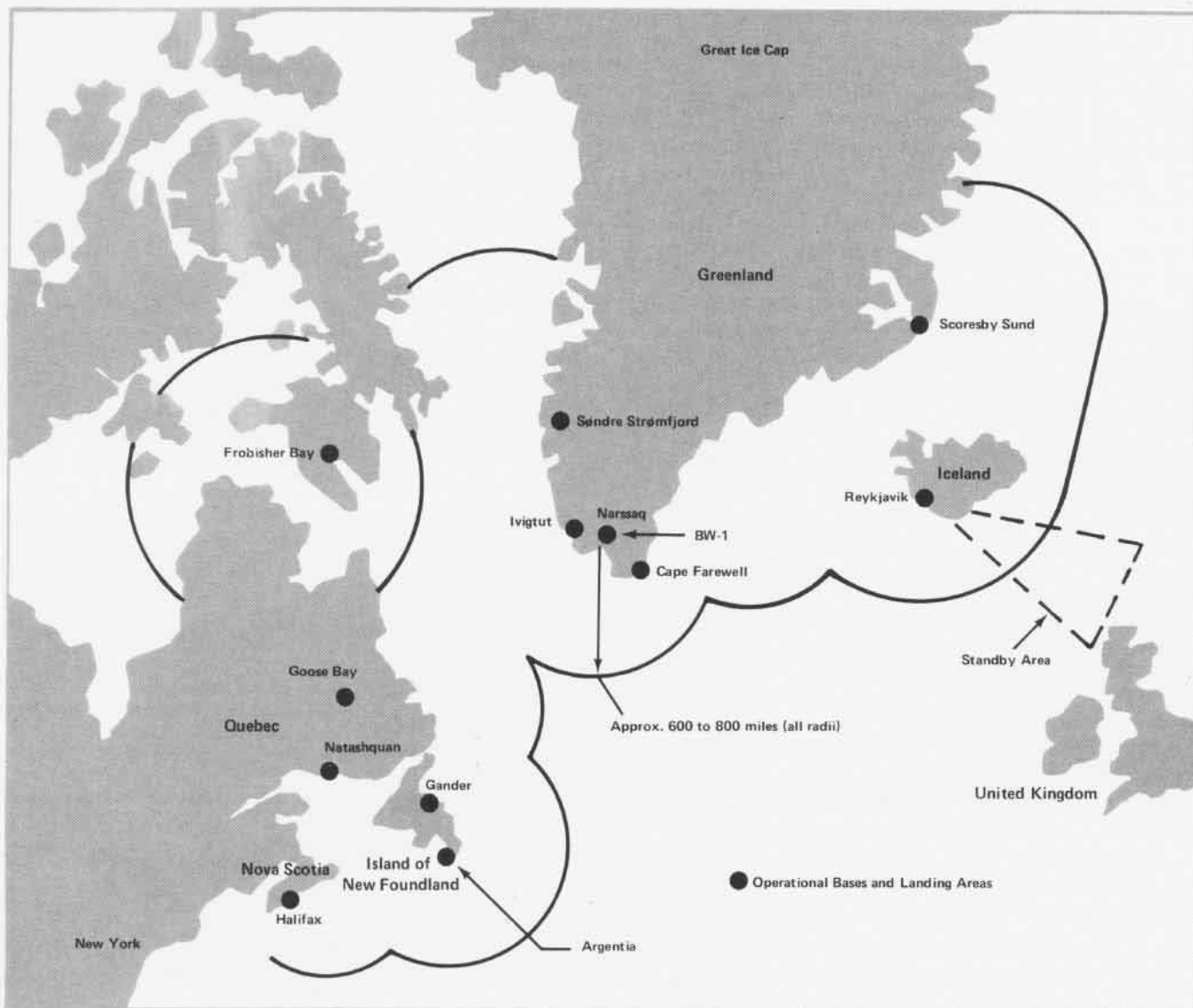
On May 30, 1945, Commander Loren H. Seeger, USCG, relieved Cdr. Swanston as commanding officer of VPB-6. On July 12, administrative control of VPB-6 was transferred from Commander Fleet Air Wing Nine to Commandant U.S. Coast Guard and it was redesignated a noncombat squadron. Operational control, however, was

retained by Commander Task Force Twenty-Four.

In August 1945, VPB-6 received a directive to transfer its base headquarters from BW-1 to the Navy facility at Argentia, where it was disestablished as a Navy squadron in January 1946.

The accomplishments of this outstanding WW II Coast Guard squadron have remained relatively unknown. However, the men who served on Arctic duty and the Greenland Patrol and their dedication to the job assigned added a heroic chapter to the story of Coast Guard Aviation. ■

VPB-6 Operational Areas





Cdr. Elmer Stone ...

Coast Guard Aviator No. 1

By JO3 Timothy J. Christmann

He was decorated by a president and received a medal from royalty. He was a Coast Guard and Naval Aviation pioneer who established a world speed record for amphibious planes and made history as one of the pilots of the first aircraft to fly across the Atlantic. He was a quiet hero.

His name was Commander Elmer Fowler Stone, the first U.S. Coast Guard Aviator, who was enshrined in the Naval Aviation Museum's Hall of Honor, Pensacola, Fla., on May 12, 1983.

As a man of vision and great courage, Elmer Stone is best known for his role as one of the pilots who flew the first transatlantic flight aboard the Navy's NC-4 Curtiss seaplane. The NC-4, in May 1919, was one of three Navy flying boats (NC-1, NC-3 and NC-4) that took off for Plymouth, England, via the Azores from a starting point at Rockaway Beach, N.Y. Stone was the only non-Navy member of the three NC crews.

Eight years before Charles Lindbergh flew his epic solo flight aboard the *Spirit of St. Louis*, the NC-4 proved the feasibility of transoceanic flight, contrary to the beliefs of many skeptics at the time. The 52-hour trip, flown mostly through mist and drizzle, also demonstrated the potential of the Navy's 2,800-pound flying boats which later became the mainstay of the U.S. Coast Guard for search and rescue missions.

"Cdr. Stone always spoke of the flight as being rough and bumpy," said Alvin Fisher, Stone's friend and plane captain while Stone was commanding officer of the Coast Guard Cape May Air Station from 1932 to 1934. Fisher is now a resident of

USCG photos



Cdr. Elmer F. Stone, first Coast Guard Aviator and pioneer, climbs into a JF-2 seaplane in the early 1930s.

Elizabeth City, N.C. In a recent interview, the 76-year-old Fisher said Stone knew everything about the NC-4 and contributed significantly to the success of its missions.

Clarence F. Edge, a retired 82-year-old Coast Guard commander living in Largo, Fla., agrees with Fisher. "He was one of the key men of the flight," said Edge, a 22-year Coast Guard veteran and a close friend, who served with Stone during three tours of duty. The history-making crossing was not without problems, however. Edge explained that Stone, Navy Chief Machinist's Mate Eugene "Smokey" Rhoads and Navy Lieutenant James

Breese were responsible for repairing two of the NC-4's Liberty engines, which had forced the plane down near Chatham, Mass. At the time, the plane was en route to Trepassey Bay, Newfoundland, the flight's final stopover point before making the big jump across the Atlantic.

The NC-1 and NC-3 were downed by weather conditions and landed in stormy seas before reaching their destination, the Azores. The NC-1 sank while under tow by a ship that came to its aid. The NC-3 crewmen landed safely and drifted to the Azores, 205 miles away, and later taxied into the harbor under their own power. NC-4 made it all the way to Ponta Delgada in the Azores, and then went on to Lisbon and finally to Plymouth, England.

Prior to and for years after the NC-4 flight, Elmer Stone energetically supported the use of aircraft in the Coast Guard, especially for rescue and patrol work. Stone believed "flying machines" could locate vessels in distress, as well as derelicts which might be a hazard to shipping, faster than could the dwindling number of Coast Guard cutters. But new ideas are slow to be accepted and Coast Guard Aviation was not officially established until 1926.

Clarence Edge said that Stone, whom he calls "Archie," was one of three founders of Coast Guard Aviation, the others being Captain Norman B. Hall and Captain Carl C. von Paulsen. "We called them the triumvirate," he said. "All of them contributed

Awards given to Cdr. Elmer Stone

Portuguese Knight of the Order of the Tower and Sword

Navy Cross

British Air Force Cross

Victory Medal with Aviation Clasp

Congressional medal (for NC-4 flight)

Certificate of Record for establishing an international amphibian speed record

greatly to the effort, but Stone was the driving force."

Elmer Stone was born January 22, 1887, in Livonia, N.Y. He joined the Revenue Cutter Service (now the U.S. Coast Guard) in 1910 and graduated from the Coast Guard Academy three years later.

Stone's first shipboard duty assignment was aboard the cutter *Onondaga*. Later, during a tour aboard the cutter *Itasca*, Stone supervised the rescue of seven seamen from the lumber-laden schooner *C.C. Wehrum*, which was shipwrecked in gale winds off False Cape, Va. He was commended by then Assistant Secretary of the Navy Franklin D. Roosevelt for his skill and judgment during the incident.

In April 1916, Stone reported to NAS Pensacola, Fla., for aviation training. He earned his Wings of Gold in April of the following year, and became Seaplane Aviator No. 38 on the Navy's roster. Then, in 1920, he was designated Coast Guard Aviator No. 1.

After flight training and a short

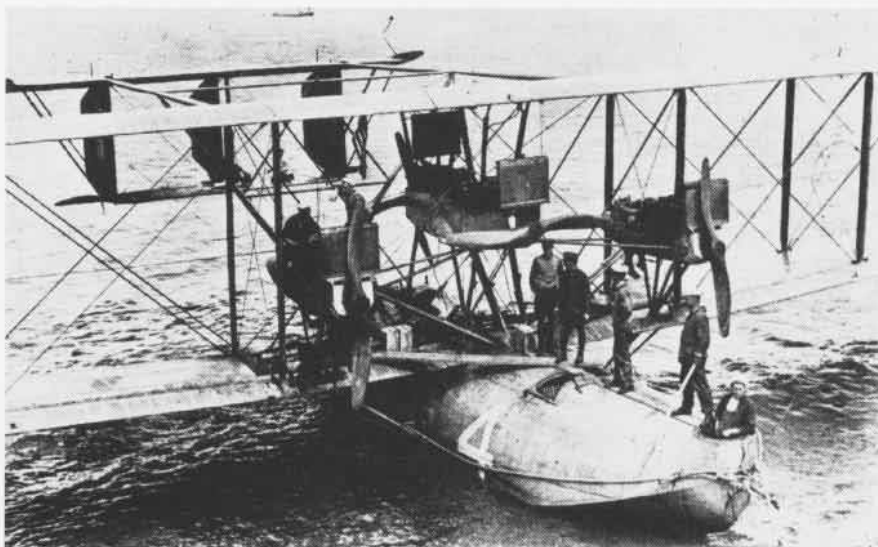
tour aboard Navy cruiser *Huntington* during WW I, Stone was ordered to NAS Rockaway, N.Y., a move that was to etch his name in history. It was here that he began his transatlantic flight aboard the NC-4, in company with Lieutenant Commander Albert C. Read, aircraft commander; Lieutenant Junior Grade Walter Hinton, pilot; Lieutenant James L. Breese, engineer; Ensign H. C. Rodd, radio operator; and Chief Machinist's Mate E. C. "Smokey" Rhoads, mechanic.

Stone was assigned test pilot duty with the Navy Department's Bureau of Aeronautics in 1920 for six years and flew everything from airplanes to dirigibles, and balloons. Said Alvin Fisher with a laugh, "Cdr. Stone always said he served more years in the Navy than he served in the Coast Guard."

"The Navy hung onto Stone because he was a brilliant aviator and engineer," Clarence Edge said. "They knew he knew what he was talking about whenever he said that something was right or wrong with an airplane."

At one point, according to Edge, the Navy offered Stone the chance to transfer from the Coast Guard and accept a Navy commission. It never happened, largely because of his dedication to the concept of Coast Guard Aviation and his desire to see it become a respected branch of his service.

During his duty as a test pilot with the Navy, Stone did considerable work developing aircraft arresting gear and catapults for the aircraft carriers *Lexington* and *Saratoga*. On February 27, 1926, Stone piloted a powder-catapulted amphibious plane from a barge anchored in the Potomac River. The powder catapult, which Stone helped develop, received its power from the discharge of a three-inch



The NC-4 as it looked at Rockaway Beach, N.Y., prior to its transatlantic voyage.

blank shell. His flight marked the first time a plane was catapulted using powder, rather than air pressure. Years later, the Navy Department commended Stone for his "valuable services" and involvement in carrier development.

On December 20, 1934, Stone established a world speed record for amphibious planes when he piloted Coast Guard (Grumman) Amphibian No. 167 at a speed of 191.734 miles per hour over a three-kilometer test course at Buckroe Beach, Va. Fisher was his plane captain.

Prior to this, Stone served as a senior member of the trial board for new Coast Guard planes that were being built at General Aviation Manufacturing Corp. in Baltimore, Md.

There was more to Elmer Stone than his technical expertise. His ability as a leader is attested to by the way his subordinates remember him. "He was the best skipper I ever knew," said Fisher, a first class petty officer at the time who later earned a Coast Guard commission. "I was in the Coast Guard 32 years and I never met a commanding officer who cared so much for his men. He treated us like a father."

Fisher has many memories of him

San Diego Facility Named for Commander Stone

Coast Guard Group/Air Station San Diego's new multipurpose building, housing Facilities Maintenance and Coast Guard Reserve, was dedicated January 26, 1983, to the memory of Cdr. Elmer F. Stone. Stone was commander of the unit's predecessor, the Coast Guard Air Patrol Detachment in San Diego, from May 1935 until his death one year later.



USCG photo

Lt. Elmer Stone, far left, poses for a picture with fellow officers and mascot of the cutter Onondaga.

and recalls vividly how Stone grilled Coast Guard student pilots bound for flight training in Pensacola, Fla. He wanted to make sure they measured up to his standards and would make a good showing for Coast Guard Aviation. At the time, Stone was skipper of the Coast Guard Air Station in Cape May, N.J.

"All the Coast Guard officers who were headed for Pensacola had to go to Cape May first," Fisher said. "When they got there, Stone would give them 10 hours of preliminary flight training and then evaluate them. He was hard with them, but sincere, and he had their complete respect. He, in turn, respected the men under him and his fellow officers."

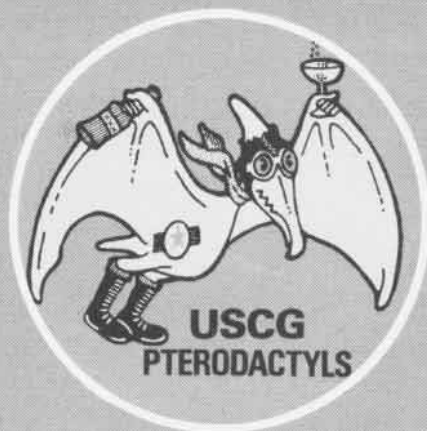
Elmer Stone received numerous awards during his career, including a special congressional medal presented to him by President Herbert Hoover for his participation in the NC-4 flight. Although Stone received other decorations, including the WW I Victory Medal with Aviation Clasp, and the Navy Cross, he was a modest individual who did not feel comfortable with public recognition of his achievements, Edge recalls.

Stone had become acquainted with

the Prince of Wales following his NC-4 flight, and Edge remembers that the prince, while on a visit to the United States, was to give Stone a British medal for his participation in the historic event. Stone reportedly sent a letter to the prince thanking him for the honor but asking him to mail the medal parcel post. According to Edge, the letter wound up in the British ambassador's hands, who passed it on to the prince. Weeks later, Stone received a package stamped with the royal seal. Appreciating Stone's feelings, the Prince of Wales had forwarded the medal and an accompanying letter which read: "Dear Archie, I hope you like it. —Wales"

On May 20, 1936, while observing a new type of flying boat patrol plane that was undergoing Navy trials at NAS San Diego, Calif., Stone, age 49, suffered a fatal heart attack. Clarence Edge was with him at the time.

Cdr. Elmer F. Stone is buried at Arlington National Cemetery. But, his legacy of personal achievements and his dedication to the highest professional standards live on for fellow Coast Guard and Naval Aviators who follow him. ■



The USCG PTERODACTYLS

Don't be fooled by the name. The Ancient Order of the Pterodactyl has nothing to do with paleontology. It is a nonprofit, fraternal and semiprofessional organization established to promote interest in and support of Coast Guard Aviation. It also encourages fellowship and esprit de corps among its members, who are mainly active duty and retired Coast Guard Aviators.

But why *pterodactyls*? It was decided at the founding of the Order in the spring of 1977 that, because of the nature of the Coast Guard Aviation experience, the uniqueness of the pterodactyl made it an appropriate symbol of the organization. It is perhaps not as recognized for its accomplishments as it could be, but it is highly respected by all who may be fortunate enough to see it in action and benefit from its services.

The Order itself, despite its short history, was deemed "ancient" because of the Coast Guard's participation in the birth of aviation, when personnel from the nearby lifeboat station helped the Wright brothers make their memorable first flight a success. Roots, that reach down into the very beginning of powered flight, impart to the fraternal order the mystique of antiquity without reflecting in any way on the age of members or aircraft.

The Ancient Order of the Pterodactyl was organized by a group of retired Coast Guard Aviators at their first meeting in Long Beach, Calif. Membership is open to all persons who are serving or who have served honorably as pilots in Coast Guard aircraft, including those of other military services and foreign governments involved in exchange programs with the Coast Guard. Associate memberships are tendered to individuals who have served in other capacities in Coast Guard aircraft, such as aircrewmembers, flight surgeons, or personnel otherwise under official flight orders. The current roster lists 517 regular members and 44 associate

members. Regular membership includes pilots in the U.S. Navy, and in the U.S., Canadian and British Air Forces.

The objectives of the organization are:

1. To promote social contact and camaraderie among all Coast Guard pilots and supporters of Coast Guard Aviation through periodic local and national gatherings.
2. To maintain dialogue between present and past members of the Coast Guard Aviation establishment.
3. To support Coast Guard Aviation and its goals.
4. To contribute to the enlargement and recognition of the history of Coast Guard Aviation.

In respect to the last objective, the Ancient Order of the Pterodactyl fully supports the fund-raising drive to support the establishment of the Coast Guard Aviation exhibit in the Naval Aviation Museum at NAS Pensacola.

To keep members and interested parties informed, the Pterodactyls publish a newsletter called "Sitrep."

The Order is administered by an executive board which includes Captain George F. Thometz, Jr., USCG(Ret.), President; Captain Arne J. Soreng, USCG(Ret.), Vice President; Captain Marion G. Shrode, Jr., USCG(Ret.), Secretary/Treasurer; and five elected trustees, one of whom is Captain Andrew W. Wall, USCG(Ret.), who conceived the idea of forming the organization. Regional chapters are established wherever there is sufficient interest. National gatherings have been held annually at Long Beach and San Francisco, Calif.; Mobile, Ala.; Elizabeth City, N.C.; and Traverse City, Mich. The 1983 gathering is being planned for this fall in San Diego, Calif. All information concerning membership, regional chapters and national gatherings may be obtained by writing to The Ancient Order of the Pterodactyl, P.O. Box 3133, Seal Beach, Calif. 90740 or by calling Captain "Gus" Shrode, Jr., USCG(Ret.) at (714) 963-8554. ■

The USCG's Last NAP

By PAC Doug Bandos, USCG



USCG photo

MCPO Greathouse

When he was a seaman, Master Chief Petty Officer John P. Greathouse learned to fly and became a Naval Aviation Pilot First Class. After 37 years of active duty, he retired in January 1979 as the United States Coast Guard's last Naval Aviation Pilot (NAP). During his years as a WW II-era enlisted Naval Aviator, he logged more than 15,000 hours in the air and was one of the first Coast Guard Aviators to reach the 10,000-flight-hour mark.

Today, he speaks of his career with enthusiasm and candor. It was exciting, he admits, because there was always a variety of aircraft to fly and something interesting happening.

Greathouse made aviation news early in his career when he parachuted from his disabled helicopter and survived without significant injury — a few bruised knuckles. It was in 1945 and he was running radar calibration tests for a battleship in Philadelphia harbor in his single-rotor Sikorsky HOS-1G *Hoverfly*. He recalls that at 5,000 feet the rotor head assembly failed completely. Luckily, he had a parachute (which was not required by regulation). He jumped and landed on a sidewalk at Broad and Bigler Streets to the astonishment of downtown Philadelphia shoppers. He has not flown a helicopter since.

Now, four years after his retirement, he finds the Coast Guard Aviation program totally different.

A native of Wills Point, Texas, Greathouse entered the Coast Guard in October 1941 and reported to his first assignment at Fort Point Lifeboat Station, Calif. He entered flight training as a seaman and became one of the approximately 200 enlisted men designated NAPs in the Coast Guard.

He was interviewed recently at his home in Biloxi, Miss.

NANews: After a career of 37 years, you obviously liked flying in the Coast Guard.

Greathouse: Yes, I liked to fly, but I wasn't too enthused about going around and around in circles on patrol.

Recently there was a sudden storm in the Gulf of Mexico and the Coast Guard pilots were flying in almost gale force winds while on rescue missions. Was there any one particular flight in bad weather that you remember the most?

I went through a WestPac hurricane — a typhoon in that part of the world — but didn't realize it until I got home and someone told me. We were going from Okinawa to the Philippines and I was in back, navigating. Our heading was southwest but the plane was tracking straight south. It was hard to believe the LORAN when the winds were blowing you off course that much.

Did you believe the LORAN or use your own instincts?

Well, when you're going through thick clouds and the only thing you've got is LORAN, you have to depend on it.

The Coast Guard's new aircraft are well equipped today for navigation, compared to then. How well equipped was the last C-131 you flew in 1978?

The C-131 wasn't too well equipped. It had radar and the standard navigation equipment but nothing as sophisticated as today's aircraft.

In regard to flight hours, according to the records, you have logged over 12,000 hours of pilot time in the air.

Actually I've got more than 15,000 hours in the air but, because of the way it used to be recorded, you only got credit for a maximum of eight hours of flight time regard-

less of how long you were in the air. The excess was logged as special crew time.

Regardless of how it was compiled, it still remains as a major flying time achievement.

Yes, it's a lot for the average pilot in the Coast Guard since he will most likely fly for only 15 years unless he makes captain. And then, only if he is fortunate enough to stay in the aviation field.

Aren't there stringent flight regulations that limit the amount of hours a pilot can safely fly before he is exhausted?

That's the best thing that ever happened to guys like me. We enlisted pilots never got off the duty status list. The new regulations allowed pilots like me to be down on the ground long enough to get a little more rest.

Speaking of pilots, how many NAPs did the Coast Guard have that you know of?

I think there were just slightly over 200 when they stopped putting people into the program.

How did you become an enlisted pilot? Were you selected by choice, or was it chance?

When I joined the service, I didn't even know that the Coast Guard had any aviators. I was stationed at Fort Point under San Francisco's Golden Gate Bridge and I put in for the Army Air Corps. Shortly afterwards the Guard came out with a set of instructions on how to get into the aviation field, and six months later I was accepted.

You were the Coast Guard's last enlisted pilot, is that correct?

I was the last one on active duty, but I was not the last one to be trained.

Looking back on 37 years of service would you say that there were more risks during the early part of your career or the latter portion?

Well, I can safely say that after 1951 I never got involved in anything serious where there was a threat of danger. From about 1953 on I flew one type of airplane, mainly the HU-16. Before that, I flew the PBY along with a few hours in a P4Y and a JRF. The bulk of my hours, almost 11,000 of them, were in the HU-16 *Albatross* because that was the number one airplane in the Coast Guard for many years.

Since you have so many hours flying the Goat, as the HU-16 is called, you certainly are qualified to tell us how stable it was in landing on the water.

It was a good airplane and easy to land in fresh water or

sheltered water where it was fairly calm. I probably made more landings on water than on land in the HU-16, at least until the 1970s when Headquarters stopped the water landings.

What do you think of today's Coast Guard aircraft compared to those you flew years ago?

There wasn't much you could do with the older aircraft. The Coast Guard right now has some good airplanes, specifically those little *Falcon* jets which can stay out only four or five hours and yet cover more area than we would ever have considered. Not only that, but their whole search area can be programmed into the computer and the only time they have to actually fly the plane is when taking off or landing. It sure would have been nice to have something like that when I was flying long patrols.

Clearly there must have been a great deal of flying done by the seat-of-your-pants method.

That was true, so much so that there was no set way to fly. Every instructor taught the student a different way. There was no standardization and, when it came time for you to become the instructor, you taught the way you wanted to.

Do you feel that today's pilots are trained better than in your day?

Well, if you always had the same instructor, you'd become used to the way he flew and do it his way, and it wouldn't make much difference. But now you fly with different people all the time and you have to know what the other guy is going to do. That's why today's standardization system is so important and contributes to better training.

Since you have actively been involved in Coast Guard Aviation for a great many years, you have seen probably more changes than anyone else flying.

The two biggest changes have been when the Coast Guard came out with the pilot standardization program about 1962, and a policy called crew mission time. Basically, they made things safer by improving training with better regulation of flight time and crew rest.

When you see the newspaper headlines or the late night TV news and there is a story about a rescue made by a Coast Guard Aviator, do you ever wonder whether you could have done it in a different manner, or perhaps a better way?

It's hard to say without being in the situation at the time and having to make the decision on the spot. From my experience, every mission is different in one way or another and the pilot has to rely on his training and experiences and those of his crew if he is to do the best job he can. ■

On the Step

Intent on continuing its superiority in aerial surveillance, the U.S. Coast Guard's Office of Research and Development has been actively investigating the use of state-of-the-art remote-sensing equipment to improve its surveillance capabilities. Major projects under way include development of an all-weather, day/night, multisensor system for the HU-25A *Guardian* medium-range search aircraft, development of a forward-looking infrared (FLIR) sensor for the forthcoming HH-65A helicopter, and investigation of a satellite-aided search and rescue system. Together, these three systems have the potential for making dramatic improvements in locating vessels in distress.

Aireye

Aireye is the designation of an advanced ocean surveillance system currently being developed for HU-25A aircraft. It is a multisensor system that includes a side-looking airborne radar (SLAR), an infrared/ultraviolet line scanner, an aerial reconnaissance camera, an active gated television (AGTV), and a control and display console. Current plans are to acquire six Aireye sensing systems which will be able to detect and identify vessels, and locate and chart oil spills. The aircraft are modified versions of the *Falcon* 20G (military designation HU-25A), which are currently being purchased by the Coast Guard. The first of 41 aircraft was delivered in 1982.

The Aireye computer will have on-board image-processing capabilities to improve the probability of accurately detecting marine targets and identifying vessels. In operation, the sensor system operator (SSO) might use the following sequence of events to obtain the best AGTV image to identify a vessel.

As the aircraft makes a low-altitude pass over the stern or bow of a ship under surveillance, the AGTV tracker is aimed at the ship's name. The image is shown on the multipurpose display and recorded on video tape. After the fly-by is completed, the SSO plays back the video tape and selects the best frames. The image is then smoothed by averaging three consecutive frames to sharpen the image and optimize contrast and brightness. Next, the SSO uses the trackball to indicate the area of the frame containing the ship's name and electronically zooms in on that area. The zoomed image is smoothed and the edges enhanced by using spatial

filtering techniques. The resulting image is scaled again for best contrast and a hard copy is produced on the dry film recorder.

The Aireye system will be a powerful tool for search and rescue. SLAR allows search sweep widths up to 44 nautical miles for life rafts and small boats, and up to 136 nautical miles for small cargo ships. Vast ocean areas can be searched with probabilities of detection of over 90 percent and in less time than visual searches. Once a target is detected, it can be observed and its activity recorded on video tape, enabling positive identification of the target, either day or night.

Side-looking Airborne Radar (SLAR)

The Coast Guard SLAR, to be integrated into the Aireye system, is a new generation of the AN/APS-92 SLAR which has been in the Department of Defense inventory in various forms for 15 years. Designated AN/APS-131, the new SLAR has been the backbone of past generation Coast Guard integrated sensor systems, and is expected to continue as the key sensor in the system.

The operating characteristics of SLAR distinguish it as the prime Aireye sensor. It has a long-range capability to detect distinct targets depending upon their radar cross section. Small boats and life rafts can be detected at ranges up to 22 nautical miles on each side of the aircraft, cabin cruisers up to 39 nautical miles and small cargo ships up to 68 nautical miles. With the new-generation Aireye SLAR, oil slicks can be detected at ranges between 13 to 21.6 nautical miles depending on sea state and aircraft altitude. This could provide an oil detection search sweep width of up to 43.2 nautical miles.

It produces good imagery in most weather conditions and is unaffected by clouds during day or night operations. Since detection of oil slicks by SLAR depends on the damping of capillary waves by the oil, slicks normally cannot be detected by SLAR on flat calm seas or on very heavy seas. The output imagery of SLAR is a wide-area map on 9-inch dry silver film, and a video multipurpose display.

Infrared/Ultraviolet (IR/UV) Line Scanner

The IR/UV line scanner supports the Aireye system by scanning the area directly below the aircraft that is missed by SLAR. After a target is spotted by SLAR, it can be overflowed and imaged by the IR/UV line scanner. With input data from three portions of the electromagnetic spectrum (SLAR, IR, UV), the system is not easily fooled, e.g., wake scars and kelp beds can be differentiated from oil slicks. The output imagery from the line scanner is recorded on film and also can be shown in real time on the multipurpose video display. The optical/mechanical portion of the line scanner is pod-mounted on the starboard wing of the HU-25A.

Aerial Reconnaissance Camera

The aerial reconnaissance camera is the KS-87B model presently used by the Department of Defense. It is a pulse-operated frame camera containing interchangeable lens cones, high-speed focal plane shutter, integral automatic exposure control, data recording and forward-motion compensation. The film-handling system is a combination cassette-magazine drive capable of operation with full 150-meter standard film spools. An observation window in the HU-25A permits

operation of the camera in two positions, either vertical or 30 degrees below horizontal.

Active Gated Television (AGTV)

The AGTV sensor is required to provide nighttime identification of vessels and their activities. It is a small, lightweight, low-power system mounted in a pod on the left wing of the aircraft with a 39-centimeter turret configured with a stabilized pointing system. In the passive mode, it functions as a low-light television with a maximum field of view of 18 degrees and is capable of detecting typical deck lights at a range of 11.3 nm. As the aircraft approaches the ship at an approximate 450-foot altitude, the field of view is reduced to 6.5 degrees and finally to 2.3 degrees. At a slant range of 2.2 nm, the AGTV is switched to the active mode, a range at which small ships can be observed.

In the active mode, illumination is provided by a 0.8-watt, pulsed gallium arsenide laser. At a slant range of 1,640 feet, 14-inch-high letters can be resolved, while 8-inch-high letters are readable at 987 feet. The imagery is presented on the Aireye multipurpose display and recorded on a video tape recorder, which enables the operator to play back the passes on the ship and "freeze" a frame for identification.

Control Display and Record Console (CDRC)

The CDRC controls the integrated Aireye sensor system. The heart of the CDRC is the sensor computer, which performs five primary functions:

1. Automatic pointing of the AGTV.
2. Generation of a map displaying search and target positions.
3. Implementation of display and control functions.

4. Digital interface of the data annotation system with the aircraft data buss.

5. Monitoring of sensor and system performance, and failure alerting.

The display functions available to the sensor operator at the console are:

- Real-time imagery from the SLAR and IR/UV scanner displayed in the form of a moving map on the multipurpose display.
- Real-time television imagery.
- Computer-generated maps called up by the control and display unit which can depict the relative positions of up to 10 search radar targets and 10 aircraft waypoints.
- Designation of important targets by use of a cursor.
- Vector information display as a line with one end fixed, normally at the sensor aircraft position, and the other end varying with the cursor movement.
- Full resolution stop action/frame freeze recording and playback of any video on the multipurpose display which permits frame-by-frame examination of the imagery.

Forward-looking Infrared (FLIR) Sensor

One of the most significant obstacles to conducting effective searches is darkness. Night searches have been historically ineffective unless the vessel or persons in distress had lights or pyrotechnic devices. The Coast Guard has equipped some helicopters with powerful searchlights but they have been of only limited use. However, it now appears that the rapidly improving technology of night-vision devices is clearing away the cloak of darkness.

In addition to the active gated television system which is part of Aireye, the Coast Guard Office of Research and Development is also investigating the use of forward-looking infrared (FLIR) sensors for search and rescue applications. In conjunction with Northrop Corporation, the Coast Guard developed a prototype FLIR system that has been installed on an HH-52A helicopter. The main function of FLIR is to form an infrared image that can be received by the operator in a standard 525-line TV display.

The Coast Guard FLIR is designed specifically for the search and rescue mission. It is attached to a support on the nose of the helicopter and enclosed in a turret assembly that is 16 inches in diameter and weighs about 85 pounds. It will rotate at 180 degrees a second and has gimbal limits of plus-30 degrees and minus-80 degrees in elevation, and plus or minus-90 degrees azimuth. The FLIR window can be rotated upward for stowing under the turret support structure to protect the optics from damage during takeoffs and landings. Because most Coast Guard flying is done over water and close to its surface, FLIR is also protected from water damage. Complete submersion of the turret will not damage the sensors.

Two fields of view are provided in the Coast Guard's FLIR. The wide field of view has an elevation of 30 degrees, 40 degrees azimuth, and is used for locating. This view is a compromise between the area viewed and detail needed, i.e., the area viewed should be large enough to permit a reasonable time to cover a search area and still be detailed enough to be able to see a person in the water. The narrow field of view is 10 degrees elevation by 13.3 degrees azimuth (a magnification of three) and gives greater detail for identification purposes.

Because watching a screen can become a tedious task, contributing to a possible missed sighting, an automatic acquisition system is being tested. A control is provided for the selection of small to medium or large targets. Once the target size is selected and the automatic acquisition is turned on, FLIR will automatically acquire a target and

track it, if its contrast is 20 percent or more than its background.

The FLIR-equipped helicopter has been in operation since July 1981 and has proven highly reliable and effective. Two days after formal delivery of FLIR to the Coast Guard by Northrop, it was used at night to locate a 10-foot powerboat that had been blown out to sea. The helicopter crew sighted the small boat on FLIR long before they could see it visually, and they could actually see the crew in the boat waving their arms. A second rescue involved locating a capsized boat that had three people on board. This rescue occurred at midnight with one-quarter-mile visibility and 4,000-foot ceiling. The crew, using the display in the cabin, located the overturned vessel within 30 minutes. The pilots never actually saw the victims until the helicopter was in a hover over them.

FLIR will go a long way in eliminating the obstacle of darkness for successful searches, and the Coast Guard plans to equip its entire fleet of 90 HH-65A helicopters with advanced FLIR systems.

SARSAT

In 1976, joint U.S. and Canadian efforts demonstrated a search and rescue satellite-aided tracking system, designated SARSAT. During 1977,

France's Centre National d'Etudes Spatiales became a participant in the SARSAT joint project, and in August 1980, the U.S.S.R. also became a member of a joint COSPAS/SARSAT project team. The U.S.S.R. will provide a search and rescue satellite system (COSPAS), which will be inter-operable with SARSAT. Norway has also joined the SARSAT team and England is considering becoming a participant.

The SARSAT program will use U.S. National Oceanic and Atmospheric Administration (NOAA) E, F and G spacecraft in the TIROS-N spacecraft series for the detection and location of emergency locating transmitters (ELTs) in aircraft, and emergency position-indicating radio beacons (EPIRBs) aboard ships.

Because radio signals can normally be received for only short distances along the surface of the water, SARSAT has the capability to provide a long-distance means to pick up and relay transmissions to ground receiving stations. The U.S.S.R. will also make available a satellite with compatible instrumentation for relay of ELT/EPIRB distress alerts, thus providing an international system having global coverage and shorter system response times.

The objective of the SARSAT project is to demonstrate and evaluate the capability of a satellite-aided search



and rescue system to improve monitoring, detection and location of distress incidents alerted by ELTs/EPIRBs carried on commercial, military and general aviation aircraft, and some marine vessels. The goal is to reduce search time through accurate position information.

The SARSAT system can provide two modes of operation, local (or regional) and global. Spacecraft instrumentation consists of a three-band repeater for the regional coverage system, and a receiver and preprocessor for the global coverage system.

In the regional coverage system, the spaceborne repeater relays distress alerts in real time that it receives from 121.5/243-MHz ELTs/EPIRBs presently carried by aircraft and vessels, to local user terminal ground stations. The regional coverage system requires visibility from the satellite of the ELT/EPIRB and the ground station. Position information is determined from the Doppler profiles between the ELTs/EPIRBs and a 46-nm altitude, polar-orbiting satellite tracked by the ground station. This information is then forwarded to a mission control center and the appropriate rescue coordination center.

The full-orbit global coverage SARSAT system operates only with the experimental 406-MHz ELTs/EPIRBs. When fully developed, the system will provide global coverage by storing information, which is received from a 406-MHz ELT/EPIRB distress alert transmission, aboard the satellite. When the satellite orbits into visibility with a ground station, the on-board stored information is transmitted on command to a NOAA control and data acquisition ground station which forwards the distress alert information to a mission control center for dissemination to rescue coordination centers. For the global coverage mode, the spacecraft on-board instrumentation includes a 406-MHz receiver and a preprocessor which computes and time-tags the Doppler profile relating to the ELT/EPIRB position and stores this information.

The location accuracy of an ELT/EPIRB is governed by many factors, including the geometry between the ELT/EPIRB and the spacecraft. Performance analysis indicates that the

SARSAT 121.5/243-MHz system is able to determine position to within 5.4 to 10.8 nm, while the 406-MHz system can locate an ELT/EPIRB to within 1 to 2.7 nm.

The U.S. Coast Guard Office of Research and Development will conduct an extensive evaluation of the SARSAT system to determine its operational performance. As a follow-on to the successful launch, and subsequent orbit, of the satellite on March 28, 1983, NASA will check out the system for a period of three months. For the next two years, the Coast Guard will carry out a number of tests assessing SARSAT's ability to detect and locate 121.5, 243 and 406-MHz EPIRB signals.

Sea Hunt

If all the electronic sensors fail, the Coast Guard Office of Research and Development has a unique system for use in helicopter searches. The project is called Sea Hunt, and both detection and processing are done in a pod under an H-52 helicopter. The sensors are common pigeons that have been trained by the Naval Ocean Systems Center to respond to the colors red, yellow and orange. A prototype system has been undergoing tests at Coast Guard Air Station, San Francisco since July 1982.

Studies have shown that there is a major difference between man's vision and that of the pigeon. The bird has a superior search rate ability and is able to process a much larger proportion of the visual field than a human in the same amount of time.

The Sea Hunt pod contains three trained pigeons, with overlapping fields of view, placed approximately at the 10, 2 and 6 o'clock positions. When a pigeon sees a red, yellow or orange object, it pecks on a key which closes a switch and illuminates an indicating light. Preliminary testing showed the pigeons could perform ocean searches better than the crew flying the helicopter. The probability of detection improved from about 40 percent for the helicopter crew to about 90 percent for the pigeons. The birds detected the colored targets on the first pass in 80

out of 89 runs, while the flight crew detected the target on the first pass in only 34 of 89 trials. The pigeons also detected the target before the human observers in 67 of 80 cases.

Whether success is measured by technological advancements using state-of-the-art computer equipment or by an innovative research project using the keen eyesight of pigeons, the Coast Guard is "on the step" in progress. ■

Cdr. White is currently Chief, Sensor Technology Branch, Systems Technology Division, in the Office of Research and Development.

HH-65A Arriving in October 1983

In October of this year, the Coast Guard is scheduled to accept its first HH-65A *Dolphin* short-range recovery helicopter. The HH-65A will replace the aging single-engine HH-52A *Seaguard*, which has been the backbone of the service's short-range search and rescue operations since the early 1960s. Ninety of the *Dolphins* are scheduled for delivery through January 1987 and will be stationed at 20 Coast Guard air units located throughout the continental U.S., Alaska and Hawaii.

Although the primary mission of the 6,800-pound gross weight HH-65A is search and rescue, the aircraft is also designed for passenger transport, cargo sling operations and patrol and observation. With its twin-turbine configuration and electronics subsystems, the *Dolphin* represents an outstanding mix of state-of-the-art, rotary-wing technology and is capable of operating from unprepared areas in visual and instrument flight conditions, day or night. Its integrated avionics systems include automatic cockpit management, area navigation (RNAV), dual LORAN C, dual VOR, TACAN, UHF/VHF/FM/HF communications, search radar, and an on-board mission computer that provides flight guidance and control. It will also be equipped with a U.S. Navy compatible helicopter-in-flight-refueling (HIFR) system. ■

NAVAL AIR TAGS



A P-3 Orion searches for drug smugglers on a routine flight in the Caribbean.

SMUGGLERS

By JO3 Timothy J. Christmann

It was a dark night in the Caribbean. Moonless, but starlit, Lieutenant Patrick L. Shuck, USCG, remembers.

Standing on the bridge of the Navy's nuclear-powered cruiser *Mississippi*, which had been in company with *Nimitz's* battle group, the Coast Guard officer watched as his seven-man Tactical Law Enforcement Team (TACLET) approached the tugboat *Recife*, thought to be carrying illegal drugs. The tug had been sighted earlier by a *Nimitz* surveillance aircraft.

The team rode in a Navy motor whaleboat toward the 108-foot tug sitting 50 yards off *Mississippi's* bow. All seven men were armed with .45-caliber pistols. Two carried M-16 semiautomatic rifles and another held a 12-gauge shotgun. "There are always risks involved with this sort of thing," Shuck says. "My men were ready."

The Navy, at the Coast Guard's request, had been tracking *Recife* for more than 60 miles in Caribbean waters. An E-2C *Hawkeye* early warning aircraft dispatched from *Nimitz* had spotted the tug that morning 70 miles off the Colombian coast. The *Hawkeye* crew took reconnaissance photos, compiled other surveillance information and turned it over to Lt. Shuck, TACLET's executive officer, aboard *Nimitz*.

The information made him suspicious. He discussed the matter with Rear Admiral Kendall E. Moranville, Commander Task Force 20 aboard the carrier, who granted Shuck permission to investigate the matter further, using Navy resources. Less than two hours later, Shuck and his seven-man team were transported by a Navy SH-3 *Sea King* helicopter from *Nimitz* to *Mississippi*, which temporarily detached from a Caribbean exercise to intercept the tug.

In response to Coast Guard query, the crew of *Recife* radioed they were on a rescue mission. However, Shuck remained distrustful because the boat did not appear to be the kind normally used in a SAR mission.

Other information fueled Shuck's suspicions. In reply to a radio inquiry by U.S. officials, the government of Honduras, whose flag *Recife* was flying, denied the tug was registered in that country. The tug was therefore considered stateless and open to boarding by the Coast Guard, according to Shuck.

Investigation of *Recife* took three hours and during that time *Mississippi* had continued to escort her north toward Florida.

Mississippi, bristling with the latest in computerized naval weaponry, had her 50-mm guns manned, and requested *Recife* to heave to. The tug's crew did as ordered.

Now, as Shuck watched his men, he thought of all the things that could go wrong if the tug carried drugs. The crew of *Recife* might be armed and prepared to repel boarders. Or, the drugs being ferried could be rigged with explosives designed to detonate when handled improperly. Both possibilities were cause for concern.

Shuck watched his men transfer to the tug, following familiar boarding procedures. The Coast Guard team quickly rounded up the crew and mustered them on the aft section of the vessel. Five of the team stood guard while two "swept" the tug for stowaways. No shots were fired.

In minutes, the sweepers were inside the cargo area. Bales labeled "product of Colombia" covered the deck and were carefully searched. No explosives were rigged.

Back on *Mississippi*, Lt. Shuck heard code word "Charlie" voiced over the radio by one of his TACLET crew. "The C stands for contraband," says Shuck. "... *Recife* was carrying more than 25 tons of marijuana."

This search turned out to be a routine bust. In the growing confrontation between drug enforcement officials and drug runners, the Coast Guard and Navy had joined forces to win one more round of this seemingly unending struggle.

Practically everyday, Navy planes scour the Caribbean using their sophisticated long-range surveillance capabilities. Their mission is to seek out suspect vessels and planes that may be ferrying illegal drugs into south Florida, and to alert the Coast Guard and civil law enforcement agencies for intercept.

"We fly missions like this at random," said Commander Michael O. Dyer, officer in charge of Carrier Airborne Early Warning Squadron 78 (VAW-78), based in Norfolk, Va. "We work in areas specified by Customs, and scout for possible drug contacts."

Cdr. Dyer said that virtually all of the Atlantic Fleet's active and reserve early warning squadrons are utilized in this effort.

"E-2C *Hawkeyes*, which have a radar vision of more than 200 miles in every direction, usually scout for low-flying aircraft that aren't on a flight plan," said Lieutenant Commander Dale Smith, CinCLantFlt public affairs officer,



Here, an HU-16E flies a law enforcement patrol in the North Atlantic. Below left, the E-2B Hawkeye is used to scout for drug smugglers in the Caribbean. Below right, tugboat Recife prior to being caught ferrying 25 tons of marijuana off Colombia.



PH2 George D. Lloyd

"planes that appear to be trying to avoid radar detection.

"*Hawkeyes* are not used to chase the aircraft they believe suspicious," he added. "Instead, they vector law enforcement aircraft to intercept the suspect."

In addition to *Hawkeye* surveillance, P-3 *Orion* sub-hunting planes from Reserve Patrol Wing, Atlantic have been active in the cooperative drug interdiction effort.

"The difference between the E-2 and P-3 operating procedures is that the E-2 primarily looks for air contacts while the P-3 looks for surface contacts," said Dyer. The P-3s also possess greater radar range capability, he added.

Like the *Hawkeyes*, P-3 *Orions* carry on surveillance activities in areas specified by Customs, according to Commander Stephen Spottswood, Commander Reserve Patrol Wing, Atlantic. "Originally, six Atlantic Fleet reserve squadrons were involved in the effort. Now, all seven are," he said.

Spottswood added that the contributions of the P-3s are important in curbing drug traffic because the Coast Guard doesn't have these kinds of assets available to handle the task themselves. The joint Navy and Coast Guard team, however, seems to be getting the right results in the Caribbean, he noted.

P-3 support flights flown between November 8 and 30, 1982 reported 217 contacts, 35 of which were rated as suspicious and were investigated by law enforcement units. These investigations resulted in the confiscation of 21 tons of marijuana, worth more than \$17 million.

Spottswood said that although the P-3 is configured to be a sub-hunting aircraft, it is a multimission platform that can be used for a variety of operations.

P-3s involved in recent drug interdiction efforts are being flown by active and reserve crews from VP-62, NAS Jacksonville, Fla; VP-64 and VP-66, NAS Willow Grove, Pa.; VP-68, NAS Patuxent River, Md.; VP-92, NAS South Weymouth, Mass.; and VP-93 from ANGB Detroit, Mich. In a recent letter to the Secretary of the Navy, Vice President George Bush wrote, "The contribution of Reserve Patrol Wing, Atlantic has been simply outstanding." He added that it was clear several offshore Coast Guard seizures "could not have been made without the locating information provided by the (Navy) P-3s."

Years ago, Navy resources could not be used in this manner because of the federal Posse Comitatus Act. "The

USCG photo



original 1878 version of the act specified only that the Army could not be used to enforce civil law," said Rear Admiral Robert E. Kirksey, Director of the Strategy, Plans and Policy Division, Washington, D.C. The restriction was broadened to include the Air Force when the latter was established as a separate service. As a matter of policy the Navy too adhered to these restrictions.

In 1978, the Chief of Naval Operations approved Navy cooperation with the nation's drug interdiction programs. "Initial efforts focused on U.S. Navy surveillance assistance through participation with the U.S. Coast Guard's high-interest, vessel-sighting program," said Kirksey. This program was created so that Navy ships and aircraft could extend the Coast Guard's surveillance capability. It was a new beginning.

For approximately three years, Navy efforts were confined to the high-interest, vessel-reporting program. In the fall of 1981, the scope of the Navy's law enforcement assistance efforts was expanded to Operation *Thunderbolt*. From October 1 to December 16, 1981, the operation brought the flow of drugs into southern Florida to a virtual standstill.

"During Operation *Thunderbolt*, E-2C *Hawkeyes* were staged out of Patrick AFB, near Cape Canaveral, Fla., and flew bilateral tracks near the Bahamas. Their goal was to interdict illicit air traffic engaged in smuggling narcotics into south Florida," said RAdm. Kirksey.

Operation *Thunderbolt* was successful beyond any expectations. In a 60-day period, *Hawkeye* crews teamed up with Customs intercept aircraft in operations which led to 97 arrests, 45 aircraft seizures, confiscation of 13 tons of marijuana, 1,113 pounds of cocaine, and 250 pounds of hashish. Some smuggling pilots got away, but 29 were arrested. In total, the *Hawkeyes* contributed to 50% of the arrests during that time period.

Impressed with this demonstration in the Caribbean, Congress revised the old Posse Comitatus Act in December 1981, giving the Services, particularly the Navy, the ability to broaden their scope in helping law enforcement agencies to catch smugglers.

One government official referred to this revision as the "threshold period...when civil law enforcement agencies started upgrading their resources." But, the official said, even this revision was a small step compared to the leap made in 1982.

In January 1982, President Ronald Reagan announced that the federal government had a responsibility to stop the flow of illegal drugs into Florida. The President established the South Florida Task Force and named Vice President George Bush as its chairman.

"Because of its thousands of miles of coastline, hundreds of operational airports and abandoned airstrips, and its geographic proximity to source countries in South and Central America, south Florida had become the avenue for an estimated 70 to 80 percent of all marijuana and cocaine illegally entering the U.S.," said Charles F. Rinkevich, South Florida Task Force director.

"The purpose of the task force was to significantly reduce the influx of illegal drugs coming into the U.S. via Florida by greatly increasing air, sea and land-based interdiction efforts," Rinkevich said.

The task force's establishment was a definite plus for

civil law enforcement agencies in their activities against the "bad guys."

E-2C *Hawkeyes* renewed operations at the Vice President's request, and more active employment of Navy surface ships began. Additionally, CinCLantFlt and Coast Guard officials worked out an operation order to put the cooperative plan into effect. It included embarkation of Coast Guard boarding teams on selected Navy vessels; interdiction of U.S. flag or stateless vessels; towing or escort of seized vessels; transportation of arrested persons in Coast Guard custody; surveillance and reporting of suspicious shipping; and logistics support for deployed Coast Guard units.

"The operation order also discussed procedures for the use of force in law enforcement operations," said RAdm. Kirksey. "They include the firing of warning shots, disability fire, self-defense and defense of others." He added that this order is perhaps the most significant step that has contributed to the success of the task force in recent drug enforcement operations.

Twice in mid-1982, Navy ships towed and escorted vessels seized by the U.S. Coast Guard. In June, the guided missile frigate *Farragut* towed and escorted two vessels into San Juan, P.R., and on June 10 the mine sweeper *Fidelity* towed a vessel into Key West, Fla. All three boats were heavily laden with marijuana. In only a few months since the task force was established, more than 450 sightings of suspect ships have been reported by Navy vessels, E-2C *Hawkeye* and P-3 *Orion* aircrews. "The information has added greatly to our intelligence," said Rinkevich.

Deployment of USCG boarding teams on Navy ships, such as Lt. Patrick Shuck's TACLET, is another aspect of joint USN/USCG operations currently being pursued.

"Now and in the future, smugglers will have to contend with the prospect that U.S. Navy ships and aircraft are also looking for them on the high seas," said Rinkevich. "The deterrent factor is growing. . . I believe the Vice President's task force has established an impressive record to date. . . but we have much more to do before our impact is fully felt."

Rinkevich added that the task force "isn't claiming to have stopped the flow of narcotics into America," but their statistics regarding its reduction are steadily improving. Between February 15 and September 30, 1982, the task force arrested 1,641 people (a 27-percent increase from the same period a year before); made 621 drug seizures (49-percent increase); confiscated 1.7 million pounds of marijuana (35-percent increase); and 5,303 pounds of cocaine (56-percent increase).

"It's still too early to tell who is winning the war," said James Dingfelder, of the South Florida Task Force. "The smugglers have the upper hand because they know when, where and how they are going to traffic drugs. The law enforcement teams have to find that out."

One thing, however, is certain. South Florida is no longer overwhelmed by drugs ferried in from across the Caribbean.

"We have the smugglers' attention," said Rinkevich, "and we are confident that with continual cooperation of Congress and the judiciary, we will make even more progress in stopping the flow of narcotics into south Florida." ■



Lexington crew members form "LEX 40th" in honor of the carrier's birthday.

Coming and Going with the Carriers

The carrier *Lexington* celebrated her 40th birthday on February 17 while en route to New Orleans where she participated in Mardi Gras 1983.

Prior to this, *Lexington* underwent two months of repair and restoration designed to maintain the ship's standard of operational readiness.

Called selective restricted availability (SRA), the *Lexington* rework was completed by the crew and more than 300 civilian contractors and shipyard personnel at Naval Station, Mayport, Fla.

A major improvement was made in the ship's navigational maneuverability when the ship's old gyro compass was replaced with new equipment. Other SRA projects included upgrading fire stations, rebuilding sections of the waste drainage system, and replacing portions of the flight deck and catapults. *Lexington*, home-ported at NAS Pensacola, Fla., is the Navy's only

carrier dedicated to training student Naval Aviators.

USS *Kennedy* was recently awarded a certificate of appreciation by the Tidewater Virginia Federal Employees Metal Trades Union "for efforts in improving relations between civilian employees at Norfolk Naval Shipyard and the *Kennedy* crew." The award, presented to *Kennedy's* commanding officer, Capt. D. Bruce Cargill, marked the first time any ship repaired at the shipyard was so recognized by the industrial trade unions. The certificate is a rendition of the coal collier *Jupiter* which underwent modifications at the shipyard in 1922 to become the Navy's first aircraft carrier *Langley*.

"I hope we have started an ongoing tradition," said Capt. Cargill. "It signifies the pride of the crew and the shipyard, and the care for the quality of work done aboard."

Axemen Prove One Navy Concept Works

"We wish we had your reserve unit on board our fleet air wing full time!" That's how one Carrier Air Wing Fourteen commanding officer felt after the *Axemen* of Tactical Electronic Warfare Squadron 309 (VAQ-309) provided a week of electronic countermeasures for the six-squadron air wing.

Home-based at NAS Whidbey Island, Wash., the *Axemen* recently took three of their four EA-6A *Intruder* jets to NAS Fallon, Nev., for the air wing's predeployment weapons training exercise to get exposed to

current fleet tactics. It also provided an increasing awareness of the capabilities of the Reserves for the fleet, according to Cdr. D. J. Wright, Commander, Carrier Air Wing Reserve Thirty.

VAQ-309 was commissioned in December 1979, and since then has routinely given electronic warfare capability to fleet, reserve aviation, and other units.

In the air, the *Axemen* have deployed on many 10-day detachments to the Navy's active duty Fighter Weapons School at NAS Miramar,

Calif. And, at sea, they have supported numerous surface force exercises, including some with Canadian naval vessels.

Comprised of five reserve flight crews and one crew with two TAR members, the *Axemen* maintain their needed flight, instrument, and physical requirements by completing two years of drills during a normal 12-month fiscal year. In addition to their normal 24 weekends, the pilots and electronic countermeasures officers often drill up to 36 days annually. The *Axemen* not only believe in the "One Navy" concept, they are proof it is working. Lt.Cdr. D. Timothy Pinkney



Lt.Cdr. D. Timothy Pinkney

An EA-6A from VAQ-309 (foreground) flies in close support of two A-6 bombers from VA-196 during predeployment work-ups at NAS Fallon.

Today is Built on Yesterday



PatWing-11's color guard and 1812 fife and drum unit perform at NAS Jacksonville.

Today is built on yesterday. That is the motto of Patrol Wing Eleven's color guard and 1812 fife and drum contingent.

Based on NAS Jacksonville, Fla., the unit consists of a five-person color guard dressed in today's jumper style uniforms, and a fife and drum contingent of seven people dressed in 1812 Navy uniforms. Together, they present the colors at change of command ceremonies, parades, and other events in the Jacksonville area.

The color guard consists of two riflemen and three flag bearers carrying the national colors, the Navy flag, and the Commander, Patrol Wing

Eleven flag.

The 1812 fife and drum contingent has three fife players, two snare drummers and one bass drummer. One man carries the Navy's first battle standard, the "Don't Tread on Me" flag, and another carries the patrol wing flag.

The members are volunteers from area commands. They rehearse after working hours and perform on weekends and holidays during their off-duty time.

The 1812 fife and drum unit was created in July 1982 and has grown from four to seven members by active recruiting. The high quality of their performance has remained constant.

Anniversaries

The *Red Rippers*, VF-11, NAS Oceana, celebrated their 56th anniversary in February 1983 as the Navy's oldest continuously active fighter squadron.

The *Devil's Disciples*, VF-301, NAS Miramar, celebrated their 12th anniversary by marking 41,700 mishap-free flight hours.

Records

VF-32, *Independence*: Lt.Cdr. Ron Rahn and Lts. Dick Bedford, Greg Dishart and Pete Rucci surpassed the 1,000-hour mark flying F-14s. Those achieving 100 carrier arrested landings were: Cdr. John Manning; Lt.Cdrs. Jack Yunker, Jim Robb, Steve Drake, Ron Rahn; Lts. Don Barbaree, Pete Rucci, Larry Young, Dirk Hebert, Greg Dishart, Byron Olson, Pat Morganelli, Dick Bedford, Randy Roach, Dave Moroney, Mike Lazar; and Ltjg Doug Garrett.

VAQ-136, *Midway*: C.O. Cdr. Bill Dwinnelle completed 800 carrier arrested landings. Lts. Mark Drake and Ollie Shearer logged 1,000 flight hours in the EA-6B *Prowler*. Lts. "Ace" Rickenbaker and Don Kohlenberger, 200 traps.

VF-14, *Independence*: Completed 100 arrested landings: Cdrs. Tom Terrill and Mike Rogers; Lt.Cdrs. John Rogers and Russ Plappert; Lts. Mike Sturm, Dirk Berry, Jim Braun, Mark Francis, Paul Fisher, Craig Kain, Herb Wilson and Kiel Norris; and Ltjgs. Bob Mixon and Al Whitehead.

HS-15, *Independence*: AWCS John Krumland surpassed his 4,000th flight hour in the SH-3 *Sea King*.

VA-87, *Independence*: C.O. Cdr. Hugh Bowles achieved his 5,000th accident-free career flight hour while deployed aboard the carrier — 3,000 accident free flight hours were flown in the A-7.

The following units marked accident-free flight operations in years: VAW-121, 16; NAS Corpus Christi, VP-60 and VMA(AW)-

121, 12; VAW-124, 11; VMGR-352, 9; VMO-2, 6; VF-2, 4; and VT-9, 3.

Other units recorded their accident-free flight operations in hours: VP-46, 150,008; VP-10, 65,000; VT-24, 49,000; VA-25 and VS-41, 30,000; VA-304, 27,431; VF-124, 25,000; VR-51, 20,000; VA-196, 14,300; HML-367 and HMH-363, 10,000; and HC-1 (Det 6), 3,000.

The following individuals recently marked personal milestones in accident-free flight hours: VMO-2: Majs. D. L. Bjork, X.O., 4,000 hours; G. E. Tubesing, 5,000; R. C. Looney, 2,000. Capts. K. T. Reed, 2,000; E. T. Timpe, J. W. Georges and M. M. Keeley, 1,000.

VT-9: Maj. Jimmy L. Graham, 3,000; Capts. Michael H. Stevens and Bert L. Zeller, 1,000. Flying the T-2C, Lt.Cdr. Thomas G. St. Denis, Lts. Patrick J. Quinn, John H. Edley, David W. Sandgren, Henry F. Burns and 1st Lt. Alari G. McKillip, 500.

VAK-308: Douglas Aircraft certificates for accumulated flight time in the KA-3B *Skywarrior* were presented to: Cdrs. J. T. Edwards, C.O., 1,500, and Charlie Gore, 2,000; Lt.Cdrs. Dave Friesz, 2,000; John Horton, 1,500; Don Webster, 1,500; Ed Norton, 1,000; Jeff Kidder, 1,000; and Lt. Lane Littrell, 1,500.

VF-33: Lt.Cdr. Mike I. Richardson logged his 2,000th flight hour in the F-14 *Tomcat* recently aboard USS *America*.

VP-26: Five *Tridents* were awarded Lockheed's 5,000-hour certificate in the P-3C Update II by RAdm. E. A. Wilkinson, Com-PatWingsLantFlt: AWC Larry Friend, 8,859; AD1 Leo M. Demers, 5,470; AMSC Gary Tschaekofske, 5,410; AMS1 Glenn A. Williams, 5,348; and AD1 Thomas M. Sullivan, 5,259.

CVW-11, USS *Enterprise*: Cdr. R. P. Hickey and Ltjg. K. J. McIlhenny of VF-213 flying an F-14A *Tomcat* made the 200,000th arrested landing aboard *Enterprise*.

NAS Oceana, SAR: Lt.Cdr. William C. Sontag received his 1,000-hour pin from Sikorsky, flying the SH-3 helicopter.

VF-161's X.O., Cdr. John Patton, achieved his 4,000th flight hour in the F-4S *Phantom*.

VA-25 marked a milestone recently by operating for over two years without engine loss or damage due to foreign object damage.

Lt.Cdr. G. A. Stearns is the first West Coast pilot to have flown 2,000 hours in the A-7. He accumulated his A-7 flight hours as a lieutenant with VA-56 aboard *Midway*, and with VA-125 and VA-122 at NAS Lemoore.

Cdr. Jack Dow, C.O. of VA-85's *Black Falcons*, completed 3,000 flight hours in the A-6 *Intruder*, while the squadron was



A VAW-121 E-2C.

undergoing its operational readiness evaluation in the Caribbean aboard *Forrestal*.

Honing the Edge

During recent exercises held at NAS China Lake, Cdr. Larry Pearson, C.O. of VF-154, and Lt.Cdr. Herb Jones successfully fired an AIM-9M *Sidewinder* missile while flying the F-4N *Phantom II*. The *Black Knights* began flying F-4Ns in December 1980 and in 1981 were one of the first fleet fighter squadrons operating the aircraft to successfully shoot an AIM-7F *Sparrow*.



LCpl. K. C. Bentley

During the first deployment of CH-53Es with a squadron, two *Super Stallions* from HMH-465, Tustin, Calif., go through a low-level navigation exercise while at MCAS Yuma, Ariz. The *Super Stallion*, the largest helicopter in the free world, is the latest addition to the Marine Corps' aviation family. The projection on the nose of each helicopter is a refueling probe, giving the CH-53E aerial refueling capabilities.

VF-101, NAS Oceana, recently completed successful carrier qualifications aboard *America*. Seventeen pilots trapped 286 times in three days, completing the final phase of their F-14 training. Winners of Golden Tailhook awards were Lt.Cdr. Murphy and Lt. Streit.

VA-303, NAS Alameda, recently returned from a week's detachment to Hill AFB, Utah. Fourteen of the 16 squadron pilots, flying A-7Bs, participated in air-to-ground weapons delivery and dissimilar air combat maneuvering training with Air Force F-16 and F-105 pilots.

HC-9, NAS North Island, returned recently from a SAR training period at NAS Fallon, Nev. Aircrews gained tactical proficiency in terrain flight, night vision goggles, rescue tactics and evasive maneuvering flight against fixed wing aircraft. HC-9 is the Navy's only squadron dedicated to combat SAR and is under the opera-

tional control of Commander, Helicopter Wing Reserve. Capt. Paul Breithaup is C.O.

After six months of training exercises at MCAS Iwakuni, Japan, VMA-331 headed home to MCAS Cherry Point, N.C. Lt.Col. J. Laurence Adkinson, C.O., reached a personal milestone of 4,000 accident-free flight hours during the exercises. Replacing VMA-331 at Iwakuni under the unit rotation program is VMA-223 from MCAS Cherry Point, commanded by Lt.Col. Ronald Hellbusch.



Utilizing the sophisticated electronic systems aboard the A-6E, VA-176 can identify and track surface contacts in daylight, darkness and bad weather. Here, an A-6E *Intruder* flown by Capt. James Lair and Cdr. Mike Currie flies past a Soviet ship in the Med near Beirut, Lebanon.



PH3 David Totten

HMM-263's CH-53Ds fly in a diamond formation along the coastline of Beirut, Lebanon, during flight operations aboard the amphibious assault ship *Inchon* (LPH-12). *Inchon* is one of the U.S. Navy ships supporting the 24th Marine Amphibious Unit in Lebanon.

Awards

Lt. Patricia A. Denkler recently received a civilian award, the USO citation for an outstanding young American, based on her accomplishments during five years of military service. She was also commended for her contributions to the Special Olympics, the Girl Scouts and the USO. She is currently assigned to VAQ-33, NAS Key West, and flies the EA-6A *Intruder*.



Established

Tactical Electronic Warfare Squadron 34 (VAQ-34) was established on March 1, 1983, at NAS Point Mugu, Calif. It is the second electronic warfare squadron assigned to Commander, Fleet Electronic Warfare Support Group, and will provide electronic warfare training to fleet units. The squadron will eventually operate both TA-7C and ERA-3B aircraft. Cdr. John Millward is C.O.

Et cetera

An R. G. Smith painting titled "The Fustest and the Mostest" has been donated to the Naval Aviation Museum, Pensacola, Fla., by Norma Bert of Long Beach, Calif. The painting is the artist's rendering of the Navy's first aircraft carrier, *Langley*, conducting flight operations with one of the Navy's most modern carriers, *Nimitz*. Smith began painting some 40 years ago and is



considered by many to be a top Naval Aviation artist. Museum director Grover Walker says, "This painting is one of the classics of naval art. . . ."

Change of Command

ASWOC-374: Cdr. Marion J. Smith relieved Cdr. James S. Nettles.
 FASOTraGruPac: Capt. Thomas J. Keene relieved Capt. Roger G. Conaughton.
 HMM-361: Lt.Col. James Schaefer relieved Lt.Col. Larry Garrett.
 HS-1: Cdr. Robert R. Hanke relieved Cdr. Lyle E. Lewis, Jr.
 HS-11: Cdr. Gerhard E. Skaar relieved Cdr. Richard A. Catone.
 USS *Coral Sea*: Capt. Jeremy D. Taylor relieved Capt. Jerome L. Johnson.
 VA-85: Cdr. Kirby E. Hughes relieved Cdr. John I. Dow.
 VA-95: Cdr. Raymond T. Wojcik relieved Cdr. Richard C. Wolter.
 VA-165: Cdr. Gary C. Wasson relieved Cdr. Paul S. Bloch.
 VA-204: Cdr. Joseph A. Chronic relieved Cdr. Edwin R. Phelps III.
 VF-11: Cdr. John W. Combs relieved Cdr. Don A. Sharer.
 VF-84: Cdr. Joseph S. Daughtry, Jr., relieved Cdr. Jay L. Johnson.
 VF-142: Cdr. J. Michael Sumnick relieved Cdr. John R. Wood, Jr.
 VF-161: Cdr. Robert C. Williamson relieved Cdr. Yancey Newell Tarrant.
 VP-0479: Cdr. James Tucker relieved Cdr. Douglas Siebert.
 VP-4549: Cdr. Richard J. Stohr relieved Cdr. Ronald G. Whittaker.
 VT-4: Cdr. John C. Allman, Jr., relieved Cdr. Rodman M. Eddy.
 VT-10: Cdr. Richard J. Burns relieved Cdr. Eugene B. Davis.
 VT-24: Cdr. Michael J. Concannon relieved Cdr. John M. Taylor.

By Lieutenant Commander Peter Mersky, USNR

Boyne, Walter, J., *Messerschmitt 262: Arrow to the Future*. Smithsonian Institution Press, Washington, D.C. 20560. 1980. 188 pp. Illustrated. \$19.95.

This well-illustrated volume, published under the auspices of the National Air and Space Museum of the Smithsonian Institution, tells the story of the NASM's own example of the world's first operational jet fighter. It has many new photographs, drawings and a forward by respected Luftwaffe ace Adolf Galland who formed one of the first successful fighter squadrons around the Messerschmitt 262 near the end of the war. *Arrow to the Future* is an in-depth look at the design of the specific aircraft and the problems of the German industry beset by political interference that curtailed the highly successful and promising designs with which Germany could have regained parity with Allied air power as late as 1944.

The book also details the story of the first American research and experimentation with captured 262s, accompanied by supporting photographs and personal glimpses. The restoration story is particularly interesting, since the section dealing with the rebirth of the NASM's *Messerschmitt* gives an unusual insight into that exacting and sometimes frustrating art.

This is a highly readable and valuable book on one of the most important aircraft in the history of aviation.

Roberts, John, *Anatomy of the Ship: The Aircraft Carrier Intrepid*. Naval Institute Press, Annapolis, Md. 21402. 1982. 96 pp. Illustrated. \$18.95.

This unusual book tells all anyone would want to know about the physical makeup of *Intrepid*, a WW II *Essex*-class aircraft carrier whose career took her through three combat tours in Vietnam and her final decommissioning in March 1974. The carrier is now berthed in New York City as a permanent aerospace and naval museum.

This book is not an operational history of *Intrepid*. Her career is only quickly mentioned in a tabular chronology and in some of the photograph captions. Rather, this volume is an interesting look at one of the most esoteric of industrial arts — marine architecture and the design of ships — in this case, a mid-20th-century aircraft carrier. Meticulously researched drawings of every conceivable aspect of the ship — decks, hull, supportive machinery, armament, and much more — provide a refreshing new way to look at a vessel whose type, and perhaps very name, has come to mean so much to millions of American servicemen.

There is not a lot of individual aircraft coverage since this book is primarily about a ship. The various aircraft carried by *Intrepid* during her WW II operations are dealt with briefly. Presented in clean line drawings, only the Curtiss *Helldiver*, Grumman *Avenger* and *Hellcat*, Douglas SBD and Chance Vought *Corsair* are shown. The *Corsair* variant chosen, oddly enough, is an F4U-2,

a night-fighter version with the characteristic radome on the right wing. The *Intrepid* carried only three of these aircraft when it was part of Rear Admiral Marc Mitscher's Task Force 58 operating in the Marshalls in January 1944.

Nonetheless, *Anatomy of a Ship: The Aircraft Carrier Intrepid* should be of interest to anyone interested in a number of areas: WW II, naval operations, aircraft carriers, Vietnam and, most especially, the crewmen who served on this gallant ship.

Haugland, Vern, *The Eagles' War: The Saga of the Eagle Squadron Pilots, 1940-45*. Jason Aronson, Inc., 111 Eighth Avenue, New York, N.Y. 10011. 1982. Illustrated and indexed. 234 pp. \$14.95.

Americans have traditionally gone to the aid of other people long before the U.S. has become officially involved. Groups like the Lafayette Escadrille of WW I, as well as several expatriots in the British Royal Flying Corps, and the Flying Tigers in China and Burma in 1941-42 are among the most famous of the military groups. Other Americans who could not wait for U.S. involvement in the war were the men who made up three Eagle Squadrons in the Royal Air Force in 1941. These squadrons were staffed by eager young men who crossed the Canadian border to enlist in various Empire units, eventually finding their way to Britain or remaining in Canada to train. These new pilots wound up as part of the hard-pressed RAF fighting the Germans, the forefront of an American presence in Europe which helped to win the war.

The Eagles' War is a new look at the Eagle squadrons, specifically numbers 71, 133 and 121. The author has included as many individuals as possible, touching upon their personal experiences. In this manner, the reader gets to know many of the Eagle pilots. We meet William Dunn who is generally recognized as the first American ace of WW II, although not as part of an American unit. Dunn's story includes his first flights in the immortal Hawker *Hurricane*, and his impressions are exciting, distinctly personal firsthand accounts.

Beyond service in England, Eagle squadron pilots also operated in the Malta and North African theaters in the hectic months of 1942, and their record there is told in detail.

Eventually, however, the Eagles were absorbed by the U.S. Army Air Force whose presence in Europe by mid-1943 was beginning to be felt. The Eagles formed the basis of the 4th Fighter Group, 8th Air Force. The 4th had more than its share of fighter aces by the war's end; many of them had been Eagle pilots.

The photographs are of a personal nature and add much to the overall work. Many of the pilots mentioned in the text are shown, either in formal portraits or in their flying gear beside or in their trusty *Spitfires*, or subsequent U.S. P-47s or P-51s. This well-written book shows an aspect of the European air war and American participation to good advantage.

Blue Angels Recruiting

The *Blue Angels* will be selecting two pilots and a flight leader this year for their 1984 team. Selections will be made in September 1983, but interested officers are encouraged to submit their applications as soon as possible.

Applicants for demonstration pilot should be tactical jet pilots with 1,500 hours of flight time, regular naval officers, and rolling to or on shore duty. Letters of application should be endorsed by commanding officers and forwarded to the *Blues* with copies to the Chief of Naval Air Training and the Chief of Naval Personnel (Pers-433A).

Officers interested in the position of flight leader must have 3,500 hours of flight time, be commanders, have screened for aviation command, and preferably have had command of a tactical jet squadron. Applicants should submit their letters directly to the Chief of Naval Air Training via their wing commander or carrier C.O., with information copies to their commanding officers, *Blue Angels* and the Chief of Naval Personnel (Pers-433A).

Each letter of application should include the officer's experience, qualifications and complete biography (CNATRA form 1331/1). For further information, call the *Blues* at auto 922-2583/2584, commercial (904) 452-2583/2584, or write the *Blue Angels*, NAS Pensacola, FL 32508.

Marine Corps Photo Squadrons

In regard to your February 1983 article "1982, The Year in Review," June 30 entry, page 39, VFP-63 was not "the last active duty photographic squadron." VMFP-3 is still extremely active duty and looking to a long, bright future. The squadron has had an RF-4B detachment aboard *Midway* year in, year out, since 1975.

Major R. O. Neal, USMC
VMFP-3 Aircrew Training Officer
MCAS El Toro
Santa Ana, CA 92709

Ed's note: *NANews* stands corrected. Indeed, VFP-63, although the last Navy active duty photographic squadron, was not the last if we had included U.S. Marine Corps squadrons. The Year in Review statement was in reference to a story that appeared in the July 1982 issue on the disestablishment of VFP-63, the Navy's last F-8 Crusader active duty photographic squadron.

NAPs

In the October 1982 issue of *NANews*, Capt. Emerson is noted (page 27) as saying that "...after WW II...there was no means yet established for an enlisted pilot to reach commissioned status." That may not be entirely accurate. Almost all NAPs were routinely commissioned during the war and the same policy remained afterwards.

When I was an AP1c in 1946, almost all NAPs were offered commissions. At the time, I was told that any AP with a high school diploma was eligible. While I don't recall seeing it in print, the fact remains that every AP I knew was made an ensign. There must have been dozens of us at Pensacola. I can't imagine that Capt. Emerson was in a different program. Actually, it was a matter of filling out the proper form and signing it. That's what most of us did and the commissions came along shortly thereafter. Simple as that!

R. G. Schipf, ex-AP1c
3100 Bancroft
Missoula, MT 59801

Blue Angels' 1983 Schedule

May	
1	NAS Lemoore, Calif.
7-8	MCAS El Toro, Calif.
14-15	McConnell AFB, Kans.
21-22	Newport, R.I.
23	Naval Academy, Md.
28-29	Dothan, Ala.
30	NAS Memphis, Tenn.
June	
4-5	Little Rock AFB, Ark.
11-12	Detroit, Mich.
18-19	Appleton, Wisc.
25-26	Indianapolis, Ind.
July	
2-4	NAS Moffett Field, Calif.
9-10	Fort Collins, Colo.
16-17	Hibbing, Minn.
23-24	Pease AFB, N.H.
30-31	Sheridan, Wyo.
August	
6	NAS Whidbey Island, Wash.
7	Seafair, Wash.
13-14	Scotia, N.Y.
20-21	NAS Miramar, Calif.
27-28	Travis AFB, Calif.
September	
3-5	Toronto, Canada
10-11	Cape Girardeau, Mo.
17-18	Reno, Nev.
24-25	NAS Oceana, Va.
October	
1-2	Clearlake, Texas
8-9	Amarillo, Texas
13	San Francisco, Calif.
15-16	Salinas, Calif.
22-23	NAS Point Mugu, Calif.
29-30	Tamiami, Fla.
November	
5-6	Phoenix, Ariz.
12-13	NAS Pensacola, Fla.

H-3

Regarding the HS-15 *Red Lions'* claim that they have the second oldest H-3 in the Navy inventory, *NANews*, January 1983, page 45, I would like to set the record straight. BuNo 148039 was the seventeenth H-3 helicopter manufactured by Sikorsky Aircraft, and in December 1982 it was the ninth oldest H-3 in the U.S. Navy inventory.

There are 21 H-3s with more flight hours than BuNo 148039; HC-1 owns six of them. The military H-3 with the highest number of flight hours as of December 1982 — 13,074 — belongs to the U.S. Air Force.

Harry F. Asbury
Sikorsky Field Representative
ComNavAirLant
NAS Norfolk, VA 23511

ITER

According to NATC's Lt. C. W. Hammond, some changes are necessary to update "ITER Program Listens to the Fleet," which appeared in the State of the Art section, *NANews*, March-April 1983. The program has been extended into 1984. Therefore, ITER modification kits were not introduced to the fleet in January 1983 as stated. In addition, the F/A-18 is no longer part of the program, and the phrase "electrical unit housing" should read "ejector unit housing."

Reunions, Conferences, etc.

Air Groups 75 and 4 reunion, June 3-6, 1983, Holiday Inn-Scope, Norfolk, Va. Contact Mr. H. R. Walker, Pegasus Data Systems, 236 Lackland Drive, Middlesex, NJ 08846.

USS Yorktown CV-5 Club reunion, June 9-12, 1983, Holiday Inn Southwest, 2580 S. Ashland Avenue, Green Bay, Wisc. Contact Robert R. Newcomb, Rt. 6, Box 2355, Rhineland, WI 54501, (715) 369-3984.

USS Essex CV/CVA/CVS-9 reunion, June 14-18, 1983, Orlando, Fla. All ship's company, air groups and embarked staff are invited. Contact Bob Morgan, 3841 S.W. 29th Place, Ocala, FL 32674, or Capt. Horst A. Petrich, 621 Robens Road, Virginia Beach, VA 23452.

USS Enterprise (CV-6) reunion, July 27-31, 1983, Milwaukee, Wisc. Contact Ed Doss, 1576 S. Forrest Road, Westport, WA 98595, (206) 268-9742.

Selection boards: Lieutenant Commander Line Active, June 6, 19 days; E-7 Active, June 13, 6 weeks.

WE'VE MOVED—Naval Aviation News and the Naval Aviation History Office are now located in Bldg. 159E, 5th floor, Washington Navy Yard Annex, Washington, DC 20374.



The United States Coast Guard Air Station, New Orleans, is placed in the limelight in this special issue because it exemplifies some of the finest professional qualities in the Coast Guard Aviation community. During its nearly 28 years of operations the station has received numerous commendations and awards for accident-free flying and thousands of rescues which have resulted in saving more than 1,500 lives.

Foremost among its achievements are seventeen and one-half years of accident-free flying.

The primary mission of Coast Guard Air Station, New Orleans, is search and rescue from Apalachicola, Fla., to the Texas/Louisiana border, and in the Gulf of Mexico. Station aircraft are on

24-hour call to assist persons or vessels in distress, and are also employed in maritime law enforcement, survey flights in support of pollution control, and cooperative efforts with local and federal agencies.

The Coast Guard Air Detachment was originally established in July 1955 and was located at NAS New Orleans flying two HO3S helicopters. In December 1957, the detachment was designated a Coast Guard Air Station, and moved with the Navy to Alvin Callender Field, where it shared a hangar with the Navy and Marine Air Reserve.

On April 1, 1969, CGAS New Orleans became the first unit in the Coast Guard to achieve operational readiness in the *Sikorsky* HH-3F helicopter (which has a 300-mile radius of operations), with three aircraft in its inventory.

During June 1980 the air station received two HH-52s — short-range rescue aircraft capable of a 150-mile radius — which greatly increased its response capabilities.

The air station has been awarded three Coast Guard Unit Commendations: for rescue efforts in the aftermath of Hurricane *Betsy*, December 9-17, 1965, when 10 Coast Guard HH-52As, four Navy and three Army helicopters accomplished the largest rescue and evacuation operation ever

conducted; for search and rescue operations, law enforcement, environmental protection patrols and logistical missions during the period October 20, 1977, to January 10, 1978; and for exceptionally meritorious service from January 1-December 31, 1980, in extended deployments including Cuban sealift operations off south Florida and Hurricane *Allen* recovery operations in Corpus Christi, Texas. During 1980, the New Orleans air station logged over 2,900 flight hours on 540 SAR missions, saving 85 lives and assisting 453 persons. Eighty-two law enforcement patrols were flown in support of operations which resulted in marijuana seizures in excess of 150 tons.

On July 21, 1981, the air station was presented the Commandant's Award for outstanding performance and achievement in safety and occupational health for 16 years of accident-free flying.

Since this air station began operation in July 1955, over 20,000 flight hours in support of search and rescue and close to 9,000 SAR missions have been successfully accomplished, resulting in an estimated \$500 million in property value saved and more than 1,500 lives rescued.

Cdr. John G. Denninger assumed command of Coast Guard Air Station New Orleans on July 21, 1982.



naval aviation_{news}

